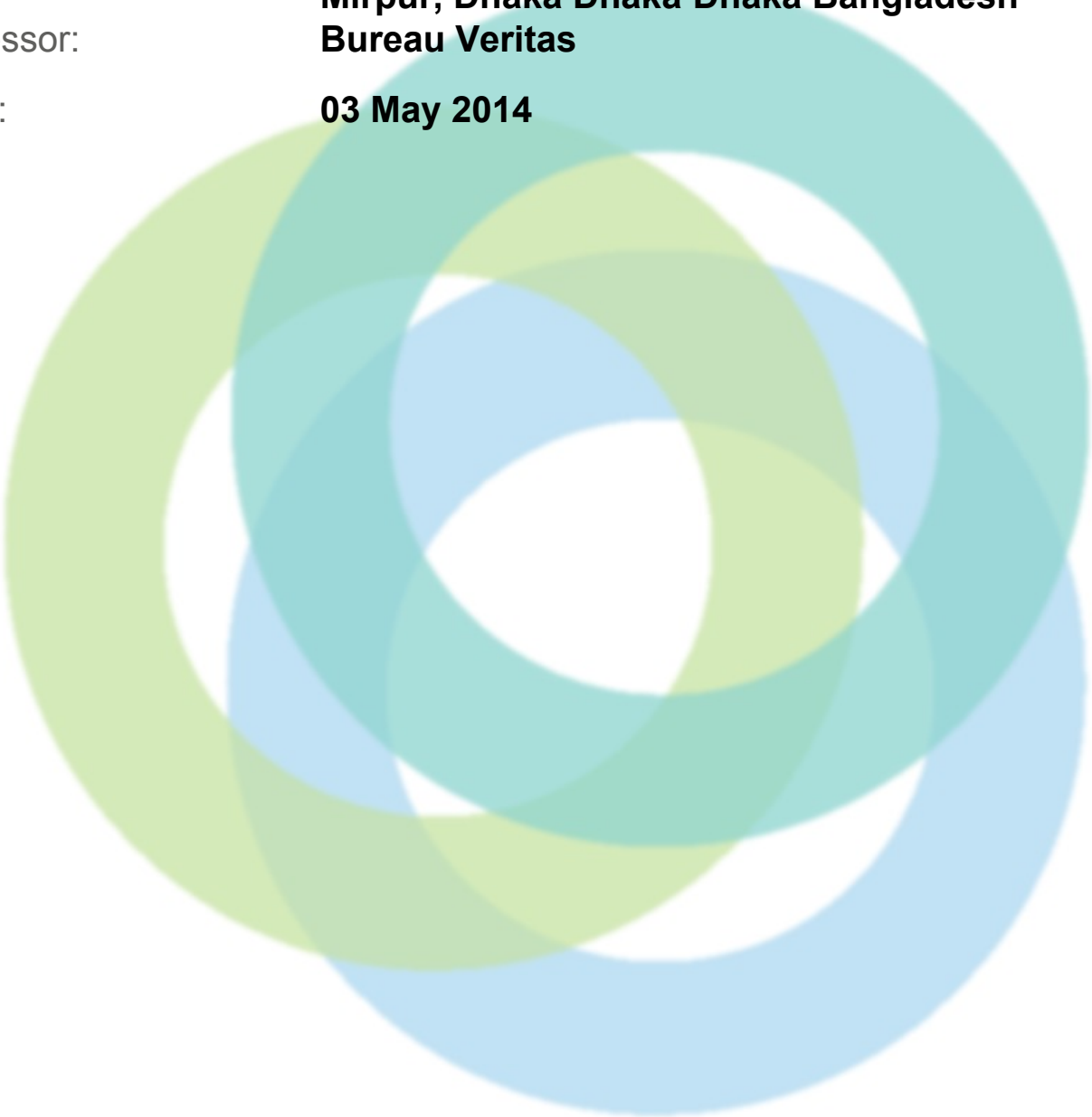


INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Rio Design Ltd**
Address: **Industrial Plot No. 3, Milk Vita Road, Section-7,
Mirpur, Dhaka Dhaka Dhaka Bangladesh**
Assessor: **Bureau Veritas**
Date: **03 May 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:	Rio Design Ltd
Address:	Industrial Plot No. 3, Milk Vita Road, Section-7, Mirpur, Dhaka Dhaka Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Dhaka
Zip Code:	1216
Audit Duration:	
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	05-03-2014
Final Report Date :	10-18-2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	There are two buildings in the premises out of which one is main production building and one is ancillary building. The buildings are named as: 1) Thirteen storied main production building with one basement, 2) One storied generator tin shed.
Number of Building Levels (Stories) :	1) Thirteen story main production building with Single basement: Stories above grade: 13, Stories below grade: 1, Occupied levels: 14, 2) One story generator tin shed: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1.
Approximate Building Area (SF) :	Total area of buildings in the factory premises: 95970.00 sft. Building wise breakdown as follows: 1) Thirteen story main production building with one basement: 95370.00 sft (Basement: 6358.00 sft, Ground Floor: 6358.00 sft, 1st Floor: 6358.00 sft, 2nd Floor: 6358.00 sft, 3rd Floor: 6358.00 sft, 4th Floor: 6358.00 sft, 5th Floor: 6358.00 sft, 6th Floor: 6358.00 sft, 7th Floor: 6358.00 sft, 8th Floor: 6358.00 sft, 9th Floor: 6358.00 sft, 10th Floor: 6358.00 sft, 11th Floor: 6358.00 sft, 12th Floor: 6358.00 sft, Roof: 6358 sft); 2) One story generator tin shed: 600.00 sft.
Date of Building Construction :	Factory personnel informed the date of construction as follows: 1) Thirteen storied main production building with one basement: Started in 2001 and finished in 2004, 2) One storied generator tin shed: Started in 2003 and finished in 2004.
Date of Last Building Renovation/Addition :	Factory personnel informed the date of last building renovation as follows: 1) One story generator tin shed: Finished in 2004.
Is the Building mixed use?:	No



Ancillary Structures in Complex :	1) One story generator tin shed.
Number of Ancillary Levels (Stories) :	1) One story generator tin shed: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1.
Approximate Ancillary Structures Area (SF) :	1) One story generator tin shed: 600.00 sft.
Number of Occupants :	Total number of occupants: 1538. 1) Thirteen story main production building with one basement: 1537 (Basement: 3, Ground floor: 30, 1st floor: 116, 2nd floor: 167, 3rd floor: 164, 4th floor: 143, 5th floor: 111, 6th floor: 167, 7th floor: 165, 8th floor: 14, 9th floor: 168, 10th floor: 113, 11th floor: 166, 12th floor: 10), 2) One story generator tin shed: 1.
Exterior Facade Description :	The building is a RCC flat plate system with infilled masonry wall. Exterior face of the masonry wall is of plaster and paint works. The main door of the building is a wooden door and the windows are of sliding glass type.
Structural System Description :	This is a RCC flat plate structural system with infilled masonry walls. Foundation type is "Mat Foundation".



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:	Structural design documents are partly available. Columns and beams details are missing. Moreover, design report is not found on. Signature & MIEB no. of structural engineer are not available in the structural drawings. Architectural drawings are not available.	
Source of Findings:	Document Review: Document review shows that Structural design documents are partly available. Columns and beams details are missing. Moreover, design report is not found on site.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:	The design document does not clearly demonstrate the conformance with any applicable code.	
Source of Findings:	Document Review: Document review shows that the design document does not clearly demonstrate the conformance with any applicable code.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:	There is no clear information available on the design document to understand the consideration of wind loading in the design of the building.
Source of Findings:	Document Review: Design review indicates that no credible information is available for understanding resistance to wind loading.
Suggested Plan of Action:	
Suggested Deadline Date:	
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:	If the structure has been previously expanded, was the structural impact on the entire structure analytically evaluated and confirmed by a qualified structural engineer.
Priority Level:	Medium
Non-Compliance Level:	2
Description:	One RCC water tank (capacity 26000 gallon) was constructed on staircase roof without design and drawing.
Source of Findings:	Visual Assessment: Visual inspection shows that one RCC water tank (capacity 26000 gallon) was constructed on staircase roof.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Reference Alliance Standards Part 8 Section 8.1 Applicability of Building Code.
Question:	Is a clear and redundant load path to resist lateral loads provided?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	The structure is a 13-storied flat plate system supported on columns and therefore the lateral load path is not apparent. Further information (design report) is required to understand the redundancy against lateral loads
Source of Findings:	Document Review: Documents available, Visual Assessment: Visually





	confirmed	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 8.3.3. 2006 BNBC Part 6 Section 1.5	
Question:	Where density of operations, storage of materials, or equipment weights require live load capacity in excess of 2.0 kN/m ² (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:	2	
Description:	The estimated floor load is about 42 psf except ground floor (60psf)	
Source of Findings:	Visual Assessment: The estimated floor load is about 42 psf except ground floor (60psf)	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 8 Section 8.15 Minimum Floor Design Loads	
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: No document has been found on Certificates of Occupancy.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:	Dampness has been found on every floor.
Source of Findings:	Visual Assessment: Visual inspection shows that dampness has been found on every floor.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance
Question:	Are any structural elements constructed with MCAC exposed to rainfall or other sources of water sealed with a protective coating to prevent water intrusion?
Priority Level:	Medium
Non-Compliance Level:	1
Description:	The roof of the building is of MCAC aggregate but no protective sealing is available.
Source of Findings:	Visual Assessment: Visual inspection shows that the roof of the building is of MCAC aggregate but no protective sealing is available.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC).
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:	1
Description:	There are some racks which are not braced for earthquake force.
Source of Findings:	Visual Assessment: There are some unbraced elements which need to be braced appropriately.
Suggested Plan of	





Action:		
Suggested Deadline Date:		
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:	3	
Description:	There is no program that will ensure that the designated load in each floor will not be exceeded.	
Source of Findings:	Document Review: Document review shows that there is no program that will ensure that the designated load in each floor will not be exceeded.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:	3	
Description:	There is no load plan available showing the actual maximum operational loading that is allowable.	
Source of Findings:	Document Review: Document review shows that there is no load plan available showing the actual maximum operational loading that is allowable.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:	3
Description:	Floor load plans are not available and are not posted.
Source of Findings:	Document Review: Document review shows that load plans are not available and are not posted., Visual Assessment: Visual inspection shows that load plans are not available and are not posted.
Suggested Plan of Action:	
Suggested Deadline Date:	
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:	3
Description:	There is no load plan. Also, there is no marking on the floor to designate spaces and height for storage of work materials.
Source of Findings:	Document Review: No load plan has been prepared and acceptable loading limits are not marked clearly., Visual Assessment: Visual inspection shows that there is no marking on the floor to designate spaces and height for storage of work materials.
Suggested Plan of Action:	
Suggested Deadline Date:	
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:	3
Description:	There is no 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.
Source of Findings:	Document Review: HR file is not available for load manager.
Suggested Plan of Action:	

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Assessor: **Bureau Veritas**

Date: **03 May 2014**



ALLIANCE
FOR BANGLADESH WORKER SAFETY

Suggested Deadline
Date:

Standard:

Alliance Standards Part 8 Section 8.9 Factory Load Manager