

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Orchid Garments Ltd**
Address: **Degerchala Road, Choidana, National University,
Gazipur Gazipur Dhaka Bangladesh**
Assessor: **Emkay Enterprises LTD**
Date: **26 Feb 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:	Orchid Garments Ltd
Address:	Degerchala Road, Choidana, National University, Gazipur Gazipur Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Gazipur
Zip Code:	1704
Audit Duration:	
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	30/5/2014
Final Report Date :	29/6/2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	Only one building in the complex
Number of Building Levels (Stories) :	10 storied + 1 Basement (Designed for 12 storied + 1 basement)
Approximate Building Area (SF) :	261,201 sft (Approx.)
Date of Building Construction :	2011-2012
Date of Last Building Renovation/Addition :	Not applicable
Is the Building mixed use?:	No
Ancillary Structures in Complex :	One Utility Building is under construction.
Number of Ancillary Levels (Stories) :	Not Applicable
Approximate Ancillary	Not Applicable

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ALLIANCE
FOR BANGLADESH WORKER SAFETY

Structures Area (SF) :	
Number of Occupants :	1900
Exterior Facade Description :	5 inch brick wall on periphery interior and exterior surface plaster finish with paint
Structural System Description :	RCC column beam frame. Mat Foundation



ASSESSMENT FINDINGS

Structural System Design

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 Reinforcement detailing of the submitted structural drawings are according to the code but no general note in the submitted drawings.	
Source of Findings:	Document Review: Provided structural drawings	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	If built after 2006, can documented compliance with the seismic and wind requirements of the 2006 BNBC be provided?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	Provided structural document doesn't mention the consideration of seismic and wind loads as per Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 2006 BNBC Part 6 Section 1.5	
Source of Findings:	Document Review: Provided structural documents	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 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:	1	



Description:	Credible structural design documents are available for review and kept on site. Though the structural drawings lack drawings of Over Head water tank and machine foundation drawings of ground floor.
Source of Findings:	Document Review: Structural drawings
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 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:	1
Description:	2006 BNBC Part 6 Section 1.5. No documentation been 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: Provided Structural documents does not mention any wind loading and storm surge loadings consideration.
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:	Results of ferro-scanning for confirmation of steel rebar in the columns of the lowest tier were satisfactory.
Priority Level:	Medium
Non-Compliance Level:	1
Description:	Ferro scanning was not done as the provided structural drawings match with the as-built configuration and there was exposed rebar on roof which matches with the provided drawings.
Source of Findings:	Photograph: Exposed rebar of column on roof
Suggested Plan of Action:	





Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Question:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:	1	
Description:	No Certificate of occupancy	
Source of Findings:	Document Review: Occupancy certificate not found.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Structural System Construction		
Question:	Is the structural system free of distress, settlement, shifting, or cracking in columns or walls?	
Priority Level:	High	
Non-Compliance Level:	2	
Description:	Horizontal crack at 5" brick wall at Brick-Lintel Joint in the reception area. In the Cantilever portion, between interface of beam and wall, crack in plaster have been found in all levels above grade except top level. (Grid Location → between (I), (J) and (3), (2); (C), (B) and west to (1). (Canti.) (B), (C); (3)	
Source of Findings:	Photograph: Horizontal crack in Brick wall Brick-Lintel interface Horizontal crack in beam-wall interface	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:	Standing water on the roof top found which needed maintenance according to	



	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
Source of Findings:	Photograph: Standing water on roof	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:	The suspended steam pipes are not adequately braced to resist earthquake forces. Racks are not anchored with floor and lateral bracing was not found.	
Source of Findings:	Photograph: Suspended steam pipes Storage racks	
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	
Question:	If the building is currently being renovated or expanded, are the Construction Practices and Safety requirements of Section 9 being followed?	
Priority Level:	Medium	
Non-Compliance Level:	1	
Description:	No structural drawings were found of the roof top water tank.	
Source of Findings:	Photograph: Roof top water tank	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 9 Construction Practices and Safety.	



Question:	The exterior façade is free of cracking.
Priority Level:	Low
Non-Compliance Level:	2
Description:	Alliance Standard Part 8 Section 8.2 Exterior facade crack found in the front side cantilever portion in the 1st floor.
Source of Findings:	Photograph: Crack in the front side exterior facade in the first floor
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 8 Section 8.2



Structural Safety Programs

Question:	Are floor loads in compliance with posted plans?
Priority Level:	Medium
Non-Compliance Level:	2
Description:	Reference Alliance Standards Part 8 Structural Design Section 8.10 Floor Loading Plans (Load Plans). Load plans are not prepared and posted on the floors, storage area
Source of Findings:	Visual Assessment: Posted floor load plans not found.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 8 Section 8.10 Floor Loading Plans (Load Plans).
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:	1
Description:	2006 BNBC Part 6 Chapter 1 Section 1.4.6 and Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9. No programs found to ensure live load. but no areas of over loading observed



Source of Findings:	Visual Assessment: During the assessment it was observed	
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:	2	
Description:	Maximum allowable live load limit has been provided by the design engineer but floor load plans have not been prepared as per Alliance Standards Part 8 Structural Design Section 8.10 Floor Loading Plans (Load Plans).	
Source of Findings:	Photograph: LOAD limits prepared by structural engineer	
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:	1	
Description:	Floor load plans not posted according to Alliance Standard Part 8 Section 8.20.5.3.	
Source of Findings:	Visual Assessment: Posted floor load plans not found.	
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:	1	
Description:	Reference Alliance Standards Part 8 Structural Design Section 8.11 Floor Load Markings. No marking to indicate the acceptable loading limit	
Source of Findings:	Visual Assessment: Storage load markings not found.	
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:	1	
Description:	Alliance Standards Part 8 Section 8.9 Factory Load Manager There is no designated load manager who is onsite full time	
Source of Findings:	Visual Assessment: During the visit it was observed	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	