INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

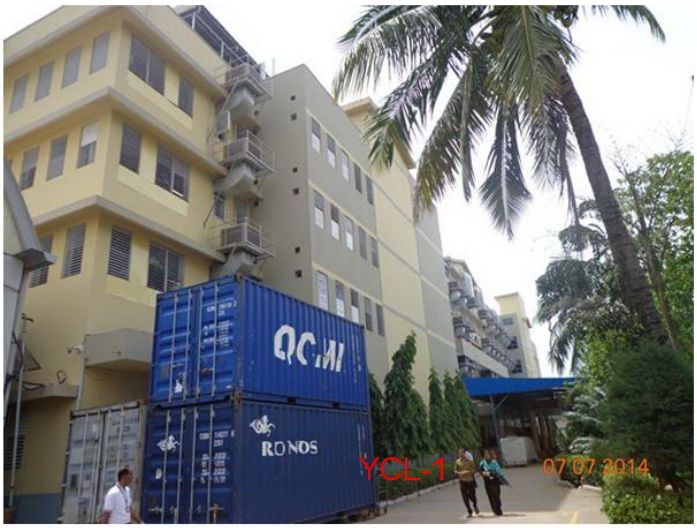
Factory Name:	**Youngone (CEPZ) Limited**
Address:	**Plot # 11-16 & 3-6, Sector # 2 Chittagong Export Processing Zone Chittagong Chittagong Bangladesh**
Assessor:	**Bureau Veritas**
Date:	**07 Jul 2014**

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:	Youngone (CEPZ) Limited
Address:	Plot # 11-16 & 3-6, Sector # 2 Chittagong Export Processing Zone Chittagong Chittagong Bangladesh
Country:	Bangladesh
Province:	Chittagong
City:	Chittagong
Zip Code:	
Audit Duration:	1 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	July 07, 2014
Final Report Date :	September 8, 2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	3 Main Buildings: 1. YCL-1 2. YCL Ltd 3. YCL-3
Number of Building Levels (Stories) :	1. YCL-1: Ground+4+Occupied Roof 2. YCL Ltd: Ground+Mezzanine 3. YCL-3: Ground+Mezzanine+4
Approximate Building Area (SF) :	538,518 SF Total
Date of Building Construction :	1. YCL-1: 1995 2. YCL Ltd.: 1986 3. YCL-3: 2014 4. Office Building: 2012 5. YCL Annex: Unknown 5. Office Building: Unknown 6. Kitchen and Store Shed: Unknown 7. Auto Workshop and Chemical Store: Unknown 8. Car parking shed 1: Unknown 9. Car parking shed 2: Unknown 10. Carpenter Shed and Garbage Store: Unknown 11. Diesel Storage: Unknown 12. Generator Building: Unknown 13. Sub-station Room: Unknown 14. WWRC Room: Unknown 15. Burn Lube-oil Store: Unknown 16. Sub-station and Generator Room: Unknown 17. Security Post-1: Unknown 18. Security Post-2: Unknown 19. Security Post-3: Unknown 20. Security Post-4: Unknown 21. Security Post-5: Unknown
Date of Last Building Renovation/Addition :	Unknown
Is the Building mixed use?:	No
Ancillary Structures in Complex :	18 Ancillary Structures: 1. YCL Annex 2. Office Building 3. Kitchen and Store Shed 4. Auto Workshop and Chemical Store 5. Car parking shed 1 6. Car parking shed 2 7. Carpenter Shed and Garbage Store 8. Diesel

	Storage 9. Generator Building 10. Sub-station room 11. WWRC Room 12. Burn Lube-oil Store 13. Sub-station and Generator Room 14. Security Post-1 15. Security Post-2 16. Security Post-3 17. Security Post-4 18. Security Post-5
Number of Ancillary Levels (Stories) :	1 (Ground) except for Generator Building (Ground+1), YCL Annex (Ground+Mezz+1), Office Building (Ground+4)
Approximate Ancillary Structures Area (SF) :	107,743 SF Total
Number of Occupants :	9,382 Total
Exterior Facade Description :	1. YCL-1: Brick masonry infill between concrete structural frame elements. Louvre windows and metal swinging main door. 2. YCL: Brick masonry infill between structural steel frame elements. Exterior faces of masonry walls are plastered and painted. Wooden main door. 3. YCL-3: Brick masonry infill between concrete structural frame elements. Louvre windows and metal swinging main door.
Structural System Description :	1. YCL-1: RCC moment resisting frame structure with a structural steel frame "shed" structure at Level 4. Spread footing foundations over sand piles. 2. YCL: Structural steel moment resisting frame structure with spread footing foundations. 3. YCL-3: RCC moment resisting frame structure. Strip foundations.
Issues were not found during the structural integrity assessment that required the Emergency Escalation Protocol (and referral to NTC Review Panel)?:	Yes

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:	YCL-01: A set of credible design document is available on site for review. However, a design report is not available which is required as per BNBC 2006 clause 1.9.1.1. The structural engineer and architect of record are known but their license information (IEB and IAB numbers) number are unknown. YCL-03: A set of credible design document is available on site for review. However, a design report is not available which is required as per BNBC 2006 clause 1.9.1.1. The identity and license information for the structural engineer of record is known, but the identity of the architect of record is unknown. YCL: A partial set of structural drawings (foundation drawings) is available for review and kept on site. However, drawings for the pre-engineered steel frame structure are not available. The identities of the structural engineer and architect of record are unknown. No structural documents were available for the YCL Annex Building, the Office Building, or any of the ancillary buildings.	
Source of Findings:	Document Review: Documents reviewed on-site.	
Suggested Plan of Action:	For the buildings missing a design report, have the structural engineer of record (for that building) prepare a design report aligning with the requirements of the BNBC. Alternatively, have a qualified structural engineer prepare credible as-built documents for these buildings based on the requirements of Part 8 Section 8.19 of the Alliance Standard. For all buildings for which there are no structural drawings, have a qualified structural engineer prepare credible as-built documents based on the requirements of Part 8 Section 8.19 of the Alliance Standard.	
Suggested Deadline Date:	31 Oct 2014	
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:	Documents available for the YCL-1 and YCL-3 building did not include a design report which would indicate conformance with BNBC requirement (although the General Notes section of the drawings for the YCL-3 building referenced the BNBC). For the YCL building, the available structural documentation was incomplete and did not include evidence of conformance	

	with BNBC requirement.	
Source of Findings:	Document Review: Documents reviewed on-site. , Photograph: General Notes section of YCL-3 drawings.	
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. This should be completed for all parts of all buildings.	
Suggested Deadline Date:	31 Oct 2014	
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:	Limited wind load design information was indicated in the General Notes section of the drawings for the YCL-3 building, but no such information was available for the YCL-1 or YCL buildings. Furthermore, no design report containing complete design information (including seismic and wind load design requirements) was available for any of the buildings.	
Source of Findings:	Document Review: Documents reviewed on-site., Uploaded Document: General Notes section of YCL-3 drawings.	
Suggested Plan of Action:	Have a qualified structural engineer document compliance with the seismic and wind requirements stated in the 2006 BNBC. This should be completed for all buildings.	
Suggested Deadline Date:	31 Oct 2014	
Standard:	Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 2006 BNBC Part 6 Section 1.5	
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:	Limited wind load design information was indicated in the General Notes section of the drawings for the YCL-3 building, but no such information was available for the YCL-1 or YCL buildings. Furthermore, no design report containing complete design information (including wind load design requirements) was available for any of the buildings.	

Source of Findings:	Document Review: Documents reviewed on-site.	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading and storm surge. This should be completed for all buildings.	
Suggested Deadline Date:	31 Oct 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:	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:	YCL-1 was designed as five story building and currently consists of five stories. However, the top level is constructed with a steel frame structure. The original structural documents do not indicate a structural steel frame at this top level. No other evidence was available to indicate that this steel frame structure was appropriately design.	
Source of Findings:	Document Review: Documents reviewed on-site.	
Suggested Plan of Action:	Have a qualified structural engineer complete an analytical evaluation of the structural impact of the steel frame structure at the top level of the YCL-1 building.	
Suggested Deadline Date:	31 Oct 2014	
Standard:	Reference Alliance Standards Part 8 Section 8.1 Applicability of Building Code.	
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:	The following concentrated loads were observed. No evidence was available that the structural impact of these loads was considered: -7 water tanks, rooftop of YCL-1 building (2 x 3000 liters, 4 x 1500 liters, 1 x 1000 liters) - Transmission tower, 50-foot tall, rooftop of YCL-1 building -2 water tanks, rooftop of YCL-3 building (2 x 2000 liters)	
Source of Findings:	Photograph: Concentrated loads.	

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:	31 Oct 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:	2	
Description:	The factory have not obtained Certificates of Occupancy.	
Source of Findings:	Document Review: Documents reviewed on-site.	
Suggested Plan of Action:	Provide Certificates of Occupancy for review.	
Suggested Deadline Date:	31 Oct 2014	
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
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:	The following elements were noted to not have adequate anchorage or bracing to resists seismic forces: -Storage racks at Ground Level and Levels 1 to 3, YCL-1 Building -Rooftop plastic water tanks, YCL-1 Building -Rooftop transmission tower, YCL-1 Building -Storage racks at Levels 1 and 3, YCL-3 Building -Rooftop plastic water tanks, YCL-3 Building -Storage racks at Ground Level and Level 1, YCL Building	
Source of Findings:	Photograph: Unbraced non-structural elements.	
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:	31 Oct 2014	
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:	The following areas requiring maintenance were observed: -Dampness at masonry walls at Ground Level and Levels 4 and 5, YCL-1 Building; -Standing water at rooftop, YCL-1 and YCL-3 Buildings.
Source of Findings:	Photograph: Areas requiring maintenance.
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:	31 Oct 2014
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance




Question:	Are expansion joints provided at appropriate intervals on the exterior façade?
Priority Level:	Low
Non-Compliance Level:	2
Description:	At the YCL-1 building, expansion joints were noted in the exterior building facade and the joints were noted to be filled with mortar, rendering them ineffective as expansion joints.
Source of Findings:	Visual Assessment: Facade expansion joint at YCL-1 building.
Suggested Plan of Action:	Have a qualified structure engineer identify the locations where a proper expansion joint is needed and then have a remediation plan developed.
Suggested Deadline Date:	31 Oct 2014
Standard:	Alliance Standard Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings


Question:	Is expansion joint material free from cracking and other forms of deterioration?
Priority Level:	Low
Non-Compliance Level:	2
Description:	The expansion joints in the YCL-1 Building were filled with mortar material and cracking was observed in the vicinity of the joints. The mortar material is not an appropriate expansion joint material.
Source of Findings:	Photograph: Cracking in vicinity of YCL-1 expansion joint.
Suggested Plan of Action:	Remove deteriorated expansion joint material and provide new approved material at the expansion joint. Engage a structural engineer to design an appropriate expansion joint retrofit using an appropriate expansion joint material.
Suggested Deadline Date:	31 Oct 2014
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: Documents reviewed on-site.
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:	31 Oct 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:	Floor load plans have not been prepared.
Source of Findings:	Document Review: Documents reviewed on-site.
Suggested Plan of	Have a qualified structural engineer develop Floor Loading Plans per the

Action:	requirements of Part 8 Section 8.20.5.3.	
Suggested Deadline Date:	31 Oct 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 have not been prepared or posted.	
Source of Findings:	Visual Assessment: No posted load plans.	
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 load plans should be visibly posted on all levels of all buildings.	
Suggested Deadline Date:	31 Oct 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 have not been marked to indicate acceptable loading limits.	
Source of Findings:	Visual Assessment: No load limit markings.	
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:	31 Oct 2014	
Standard:	Alliance Standard Part 8 Section 8.11 Floor Load Markings	