

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Fountain Garments Manufacturing Ltd**

Address: **Plot No. 61-62 Gazirchat (EPZ Road) Ashulia Savar
Dhaka 1349 Ashulia, Savar Dhaka Bangladesh**

Assessor: **Bureau Veritas**

Date: **18 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:	Fountain Garments Manufacturing Ltd
Address:	Plot No. 61-62 Gazirchat (EPZ Road) Ashulia Savar Dhaka 1349 Ashulia, Savar Dhaka Bangladesh
Country:	Bangladesh
Province:	Dhaka
City:	Ashulia, Savar
Zip Code:	1349
Audit Duration:	0 Days 8 Hours
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	05-19-2014
Final Report Date :	10-19-2014
Are all Action Items From Previous Assessment Completed?:	No
Buildings in Complex :	There are 6 buildings in the factory premises out of which one is main production building and five are ancillary buildings. The buildings are named as: 1) Seven Story Main Building, 2) Single Story Child care & Doctors Room, 3) Single Story Generator & Substation room, 4) Three Story ETP (Under construction), 5) Single Story Fire control and security room, 6) Single Story Fire pump & generator room.
Number of Building Levels (Stories) :	1) Seven Story Main Building: Stories above grade: 7, Stories below grade: 0, Occupied levels: 7, 2) Single Story Child care & Doctors Room: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 3) Single Story Generator & Substation room: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 4) Three Story ETP (Under construction): Stories above grade: 3, Stories below grade: 0, Occupied levels: 3, 5) Single Story Fire control and security room: Stories above grade: 2, Stories below grade: 0, Occupied levels: 2, 6) Single Story Fire pump & generator room: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1.
Approximate Building Area (SF) :	Total area of buildings in the factory premises: 230969 sft; Building wise breakdown as follows: 1) Seven Story Main Building: 224284 sft (Ground floor: 26502 sft, 1st floor: 26502 sft, 2nd floor: 29569 sft, 3rd floor: 29569 sft, 4th floor: 29569 sft, 5th floor: 29569 sft, 6th floor: 26502 sft Roof: 26502 sft), 2) Single Story Child care & Doctors Room: 850 sft, 3) Single Story Generator & Substation room: 815 sft, 4) Three Story ETP (Under construction): 4200 sft (Ground floor: 1050 sft, 1st floor: 1050 sft, 2nd floor: 1050 sft Roof: 1050 sft), 5) Single Story Fire control and security room: 720 sft, 6) Single Story Fire pump & generator room: 100sft.
Date of Building Construction :	Factory personnel informed the date of construction as follows: 1) Seven Story Main Building: Ground floor to 3rd floor finished in 2006, 2) Single Story Child care & Doctors Room: Finished in 2010, 3) Single Story Generator & Substation room: Finished in 2005, 4) Three Story ETP (Under construction): Construction on going, 5) Single Story Fire control and security room: Finished in 2013, 6) Single Story Fire pump & generator



	room: Finished in 2014.
Date of Last Building Renovation/Addition :	1) Seven Story Main Building: 4th, 5th & 6th floor finishing work is running.
Is the Building mixed use?:	No
Ancillary Structures in Complex :	1) Single Story Child care & Doctors Room, 2) Single Story Generator & Substation room, 3) Three Story ETP (Under construction), 4) Single Story Fire control and security room, 5) Single Story Fire pump & generator room.
Number of Ancillary Levels (Stories) :	1) Single Story Child care & Doctors Room: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 2) Single Story Generator & Substation room: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1, 3) Three Story ETP (Under construction): Stories above grade: 3, Stories below grade: 0, Occupied levels: 3, 4) Single Story Fire control and security room: Stories above grade: 2, Stories below grade: 0, Occupied levels: 2, 5) Single Story Fire pump & generator room: Stories above grade: 1, Stories below grade: 0, Occupied levels: 1.
Approximate Ancillary Structures Area (SF) :	1) Single Story Child care & Doctors Room: 850 sft, 2) Single Story Generator & Substation room: 815 sft, 3) Three Story ETP (Under construction): 4200 sft (Ground floor: 1050 sft, 1st floor: 1050 sft, 2nd floor: 1050 sft Roof: 1050 sft), 4) Single Story Fire control and security room: 720 sft, 5) Single Story Fire pump & generator room: 100 sft.
Number of Occupants :	Total number of occupants: 2157. 1) Seven Story Main Building: Total Occupants: 2149 (Ground floor: 50, 1st floor: 100, 2nd floor: 689, 3rd floor: 712, 4th floor: 588, 5th floor: 0, 6th floor: 10), 2) Single Story Child care & Doctors Room: 2, 3) Single Story Generator & Substation room: 2, 4) Three Story ETP (Under construction): 0, 5) Single Story Fire control and security room: 2, 6) Single Story Fire pump & generator room: 2.
Exterior Facade Description :	Factory main building is a seven storied building with RCC frame structure with masonry infill. Glass windows in aluminum frame are sliding.
Structural System Description :	Building is RCC moment resisting frame structure, supported on isolated footing.



ASSESSMENT FINDINGS

Structural System Design

Question:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:		
Description:	Certificate of occupancy is available & issued from Savar Cantonment Board for the main factory and ETP building in the year of 2014.	
Source of Findings:	Document Review: Certificate of occupancy is documented/available & issued from Savar Cantonment Board for the main factory and ETP building in the year of 2014., Photograph: Occupancy Certificate has been submitted during structural assessment	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment	
Question:	Structural Engineer of Record	
Priority Level:		
Non-Compliance Level:		
Description:	Name: Md. Shamim Akhtar , FIEB No- 7714, Firm Name: International Technical Consultants Ltd. 56, New Eskaton Road, Ahsan Plaza (3rd Floor) Dhaka-1000.	
Source of Findings:	Document Review: The structural engineers name and firm name are found from the structural drawing.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Provide the name and firm of the structural engineer of record.	
Question:	Architect of Record	
Priority Level:		
Non-Compliance Level:		



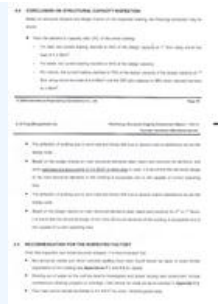
Description:	Nasrin Akter IAB Membership No: A-134 56, New Eshkaton Road Ahsan Plaza, 3rd Floor Dhaka, Phone: 9338571-3
Source of Findings:	Document Review: The Architect's name & registration no. is found from the architectural drawing.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Provide the name and firm of the architect of record.
Question:	Are credible structural design documents available for review and kept on site?
Priority Level:	Medium
Non-Compliance Level:	1
Description:	Structural assessment report is available, performed by International Engineering Consultant Co. Ltd. As-built drawings do not match with the existing condition of the building.
Source of Findings:	Document Review: Structural assessment report is available, performed by International Engineering Consultant Co. Ltd. As-built drawings do not match with the existing condition of the building.
Suggested Plan of Action:	Have a qualified structural engineer prepare credible as-built drawings based on the requirements of Part 8 Section 8.19 of the Alliance Standard.
Suggested Deadline Date:	23 Jul 2014
Standard:	Alliance Standard Part 8 Section 8.19 Required Structural Documentation for New and Existing Factories
Question:	Is a Geotechnical Report available for review and kept on site?
Priority Level:	Low
Non-Compliance Level:	
Description:	Geo-technical report is available for review and kept on site.
Source of Findings:	Document Review: Geo-technical report is documented properly.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard 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:		
Description:	Structural assessment, by International Engineering Consultant Co. Ltd, is available indicating the general conformance with BNBC.	
Source of Findings:	Document Review: Structural assessment, by International Engineering Consultant Co. Ltd, is available indicating the general conformance with BNBC.	
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:		
Description:	Structural assessment confirms the capacity of the building against wind and seismic load for the as-built building condition according to of BNBC 2006.	
Source of Findings:	Document Review: Structural assessment confirms the capacity of the building against wind and seismic load for the as-built conditions of the factory according to of BNBC 2006.	
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:	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:		
Description:	Structural assessment shows that the building compliant with the requirement for wind loading as detailed in BNBC.	
Source of Findings:	Document Review: Structural assessment shows that the building is compliant with the requirements for wind loading as detailed in BNBC.	
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:	Has evidence of structural integrity been provided using a Preliminary Structural Assessment?	
Priority Level:	High	
Non-Compliance Level:		
Description:	Structural assessment has been done and it claims that the structure is sound.	
Source of Findings:	Document Review: From document review, the factory authority submitted one preliminary structural integrity assessment report.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
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:		
Description:	The structure has not been previously expanded.	
Source of Findings:	Visual Assessment: From visual inspection, the structure has not been	



	previously expanded.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 8 Section 8.1 Applicability of Building Code.	
Question:	Structural System Type as defined by 2006 BNBC Part 6 Chapter 1 Table 6.1.2.	
Priority Level:		
Non-Compliance Level:		
Description:	The main factory building is a moment resisting frame structure.	
Source of Findings:	Document Review: From document review, the main factory building is a moment resisting frame structure., Visual Assessment: From visual inspection, the main factory building is a moment resisting frame structure.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	2006 BNBC Part 6 Chapter 1 Table 6.1.2	
Question:	What is the Structural Configuration?	
Priority Level:		
Non-Compliance Level:		
Description:	Main factory building is a irregular structure.	
Source of Findings:	Document Review: From document review, main factory building is a irregular structure., Visual Assessment: From visual assessment, main factory building is a irregular structure.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	2006 BNBC Part 6 Chapter 1 Section 1.3.4	



Question:	Is a clear and redundant load path to resist lateral loads provided?
Priority Level:	Medium
Non-Compliance Level:	
Description:	The structural configuration is moment resisting frame and hence the lateral load path is apparent and there is redundancy due to presence of multiple frames in both direction.
Source of Findings:	Document Review: In structural integrity assessment report, for the main factory building, adequacy and redundancy of the lateral load path is established., Visual Assessment: From visual inspection, continuous lateral load path for the main factory building is present.
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:	Are the available FoS for the columns adequate based on Preliminary calculation?
Priority Level:	High
Non-Compliance Level:	
Description:	Yes, FoS for the columns are adequate based on preliminary stress calculation. For main factory building, FoS for Central column: 2.28 FoS for Edge column: 2.09 FoS for Corner column: 2.04 No design details are available for other ancillary buildings.
Source of Findings:	Uploaded Document: Preliminary stress calculation shows satisfactory results for typical central, corner and edge column.
Suggested Plan of Action:	
Suggested Deadline Date:	
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:	Results of ferro-scanning for confirmation of steel rebar in the columns of the lowest tier were satisfactory.
Priority Level:	Medium
Non-Compliance Level:	
Description:	Results of ferro-scanning for confirmation of steel rebar in the columns of the lowest tier were satisfactory.
Source of Findings:	Photograph: Ferro scanning shows rebars are matching with structural design.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment
Question:	What are the full dead and live loads of the floor slabs and decks?
Priority Level:	
Non-Compliance Level:	
Description:	For the main building, slab thickness from drawings is 6.5"; therefore, dead load is $81.25 + 25(FF) = 106.25$ psf. From visual inspection live load is about 42 psf.
Source of Findings:	Document Review: Slab thickness is mentioned in structural drawings., Visual Assessment: From visual inspection live load is about 42 psf.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Provide information regarding the dead and live loads of the floor slabs and decks.
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 six 3000L water tanks and one 1500L water tank on roof. However, no provision has been made in floor for a concentrated load (such as heavy equipment, water tank, stored materials).
Source of Findings:	Document Review: From document review, no provision has been made in





	floor for a concentrated load (such as heavy equipment, water tank, stored materials)., Visual Assessment: From visual inspection, there are six 3000L water tanks and one 1500L water tank on 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:	23 Jul 2014
Standard:	Alliance Standard Part 8 Section 8.13 and 8.14
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:	
Description:	The estimated floor load does not exceed 42 psf.
Source of Findings:	Visual Assessment: Approximate estimation of the floor load does not exceed 42 psf.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standards Part 8 Section 8.15 Minimum Floor Design Loads

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 in walls and water ponding in rooftop are noted.
Source of Findings:	Visual Assessment: From visual assessment, dampness in walls and water ponding in rooftop are noted.
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:	23 Jul 2014





Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
Question:	The exterior façade is free of cracking.	
Priority Level:	Low	
Non-Compliance Level:		
Description:	The exterior facade is free from cracking.	
Source of Findings:	Visual Assessment: Visually the exterior facade is free from cracking.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.2	
Question:	Are expansion joints provided at appropriate intervals on the exterior façade?	
Priority Level:	Low	
Non-Compliance Level:		
Description:	There is no expansion joint in the building.	
Source of Findings:	Document Review: No expansion joint have been found from the structural document., Visual Assessment: Visually no expansion joint has been found in the main factory building.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:		
Description:	There is no expansion joint in the building.	
Source of Findings:	Visual Assessment: visually there were no expansion joint found	
Suggested Plan of Action:		
Suggested Deadline Date:		



Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
Question:	Is the building free of active signs of water intrusion or ponding due to lack of performance of the façade system?	
Priority Level:	Low	
Non-Compliance Level:		
Description:	There is no active sign of water intrusion or ponding due to lack of performance of the facade system.	
Source of Findings:	Visual Assessment: Visual investigation shows that there is no active sign of water intrusion or ponding due to lack of performance of the facade system.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	
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:		
Description:	The performance of the key structural elements is satisfactory.	
Source of Findings:	Visual Assessment: Visual inspections show that the performance of the key structural elements is satisfactory.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.3.3	
Question:	Is the structural system free of settlement cracking, excessive perimeter separations, and unlevel floors attributable to foundation settlements?	
Priority Level:	High	
Non-Compliance Level:		
Description:	Yes, the structural system is free of settlement cracking, excessive perimeter separation etc. which shows no noticeable settlement occurred.	
Source of Findings:	Visual Assessment: Visual assessment shows no noticeable settlement of the structure.	



Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 8 Structural Design Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	Is the structural system free of deflections (sagging), rotations (twisting), perceivable vibrations, or other noticeable movements of the structure?	
Priority Level:	High	
Non-Compliance Level:		
Description:	The structure is free of deflections, rotations, and perceivable vibrations.	
Source of Findings:	Visual Assessment: Visually assessed the structure	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 8 Structural Design Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	Is the structural system free of distress, separations, or cracking that indicates lack of performance or overstress of the lateral load-carrying system?	
Priority Level:	High	
Non-Compliance Level:		
Description:	There is no sign of visible sign of distress or crack that may indicate lack of performance or overstress of the lateral load-carrying system.	
Source of Findings:	Visual Assessment: Visual inspection shows that the structural system is free of visible distress, separation, and cracking which indicate lack of performance of or overstress of lateral load-carrying system.	
Suggested Plan of Action:		
Suggested Deadline Date:		
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:	There is no crack in the columns. However, there are some masonry cracks in the walls which are not affecting the performance of the structure.	
Source of Findings:	Visual Assessment: Visual assessment shows that there are no cracks in the columns. However, there are some masonry cracks in the walls which are not affecting the performance of the structure.	
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:	25 Jul 2014	
Standard:	Alliance Standard Part 8 Section 8.3.3	
Question:	Have any previous repairs to correct structural deficiencies or to reinforce the existing structure been completed?	
Priority Level:		
Non-Compliance Level:		
Description:	No strengthening or retrofitting has been done on the structural members of the building.	
Source of Findings:	Document Review: Document review shows that no strengthening or retrofitting has been done on the structural members of the building.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:		
Question:	Was masonry-chip aggregate concrete (MCAC) used in the construction of the building?	
Priority Level:		
Non-Compliance Level:		
Description:	The building columns are made of stone chips.	
Source of Findings:	Document Review: As per submitted structural drawings, stone chips is used for all structural components., Visual Assessment: Visual assessment during non-destructive testing confirms stone chips in columns.	



Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC)	
Question:	If yes, have the structural members constructed with MCAC been investigated by an appropriate program of in-situ testing and representative destructive testing or core samples?	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	The structure is made of stone chips.	
Source of Findings:	Visual Assessment: visually found that structure is constructed with stone chip concrete	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Reference Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC)	
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:		
Description:	The structure is constructed with stone chips.	
Source of Findings:	Visual Assessment: The structure is constructed with stone chips.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC).	
Question:	Are structural steel members free of corrosion, physical damage or other types of deterioration?	
Priority Level:	Medium	



Non-Compliance Level:		
Description:	There is no structural steel members within factory premise.	
Source of Findings:	Visual Assessment: Visual inspection shows there is no structural steel members within factory premise.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.26	
Question:	For post-tensioned reinforced concrete systems or elements, cored holes have not compromised the post-tensioned strands.	
Priority Level:	High	
Non-Compliance Level:		
Description:	There is no post-tensioned reinforced concrete elements in the existing main factory building.	
Source of Findings:	Document Review: Document review shows that there is no post-tensioned reinforced concrete elements in the existing main factory building.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Not Applicable	
Question:	Is the structure free from any major/progressive distress?	
Priority Level:	High	
Non-Compliance Level:		
Description:	The structure is free from any major/progressive sign of distress.	
Source of Findings:	Visual Assessment: Visual inspection shows that there is no sign of progressive distress visible in the structure.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standards Part 8 Section 8.3.3	



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:	In the accessory store room of sixth floor, there are racks which are not braced for earthquake force. Other non-structural members hangs from the top of the slab are braced properly.
Source of Findings:	Visual Assessment: Visual inspection shows that In the accessory store room of sixth floor, there are racks which are not braced for earthquake force. Other non-structural members hangs from the top of the slab are braced properly.
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:	01 Sep 2014
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:	
Description:	No renovation or expansion work is currently going on. For note only, the factory authority has started one undocumented vertical addition work in the top floor of the building front.
Source of Findings:	Visual Assessment: Visual assessment shows no sign of renovation or expansion.
Suggested Plan of Action:	
Suggested Deadline Date:	
Standard:	Alliance Standard Part 9 Construction Practices and Safety.



Structural Safety Programs

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:	
Description:	There are load Plans for each floor documenting the actual maximum





	operational loading that is allowable on each floor.	
Source of Findings:	Document Review: Factory authority submitted floor load plans, prepared based on the preliminary structural integrity assessment of the existing main factory building, during the factory visit. And those plans are documenting maximum operational loading allowable for each floor.	
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:		
Description:	Floor load plans are posted as required.	
Source of Findings:	Visual Assessment: Visual inspection of the factory shows floor load plans is not posted at each floor.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.20.5.3	
Question:	Are floor loads in compliance with posted plans?	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	Floor load are in compliance with posted plan.	
Source of Findings:	Visual Assessment: From visual estimate, floor loads are in compliance with posted plan.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.10 Floor Loading Plans (Load Plans).	



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 are posted floor load plans in all floors. But, there is no marking on the floor to designate spaces and height for storage of work materials, except ground floor and first floor.
Source of Findings:	Visual Assessment: Visual inspection shows that there are posted floor load plans on all floors. But, except for the ground floor and first floor, there are no markings on the floor itself to designate the location and to what height work materials are to be stored.
Suggested Plan of Action:	Have the floors marked by a qualified structural engineer to designate storage area as per the developed load plan.
Suggested Deadline Date:	23 Jul 2014
Standard:	Alliance Standard Part 8 Section 8.11 Floor Load Markings
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: There is no evidence of existence of any program to control the live load in the factory.
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:	09 Jun 2014
Standard:	Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9.
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: There is no evidence of a designated load manager being present in the factory.	
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 Jul 2014	
Standard:	Alliance Standards Part 8 Section 8.9 Factory Load Manager	
Question:	For post-tensioned reinforced concrete systems or elements, is a program in place to ensure post-tensioned strands are located before core drilling begins?	
Priority Level:	Medium	
Non-Compliance Level:		
Description:	There are no post-tensioned reinforced concrete systems or elements have been found.	
Source of Findings:	Document Review: No post-tensioned reinforced concrete system or elements have been documented in the structural drawing., Visual Assessment: No post-tensioned reinforced concrete system or elements have been found in the visual inspection.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	