

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **The Need Apparels (PVT.) Ltd**
Address: **154/C Rajakhal Road, East Bakalla, Bakalla,
Chittagong Chittagong Chittagong Bangladesh**
Assessor: **Bureau Veritas**
Date: **09 Jun 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:	The Need Apparels (PVT.) Ltd
Address:	154/C Rajakhal Road, East Bakalla, Bakalla, Chittagong Chittagong Chittagong Bangladesh
Country:	Bangladesh
Province:	Chittagong
City:	Chittagong
Zip Code:	4000
Audit Duration:	1 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	06-18-2014
Final Report Date :	10-22-2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	There are two buildings in the factory premises out of which one is main production building and other one is ancillary building. The buildings are named as: 1) Five story RCC main production building with occupied level, 2) Two story RCC generator building.
Number of Building Levels (Stories) :	1) Five story RCC main production building with occupied level on roof: Stories above grade: 6, Stories below grade: 0, Occupied levels: 6, 2) Two story RCC generator building: Stories above grade: 2, Stories below grade: 0, Occupied levels: 2.
Approximate Building Area (SF) :	Total area of buildings in the factory premises: 68158.00 sft. Building wise breakdown as follows: 1) Six story RCC main production building: 67584.00 sft (Ground floor: 11264.00 sft, 1st floor: 11264.00 sft, 2nd floor: 11264.00 sft, 3rd floor: 11264.00 sft, 4th floor: 11264.00 sft, 5th floor(Occupied): 1400.00 sft, Unoccupied roof: 9864.00 sft), 2) Two story RCC generator building: 574.00 sft (Ground Floor: 287.00 sft, 1st Floor: 287.00 sft).
Date of Building Construction :	Factory personnel informed the date of construction as follows: 1) Five story RCC main production building with occupied level on roof: Started in May- 2001 and finished in December-2002, 2) Two story RCC generator building: No record for date of construction was found.
Date of Last Building Renovation/Addition :	No record for date of renovation or addition was found from factory personnel.
Is the Building mixed use?:	No
Ancillary Structures in	1) Two story RCC generator building.

Factory Name: **The Need Apparels (PVT.) Ltd**
Address: **154/C Rajakhal Road, East Bakalla, Bakalla, Chittagong Chittagong Chittagong Bangladesh**

Assessor: **Bureau Veritas**

Date: **09 Jun 2014**




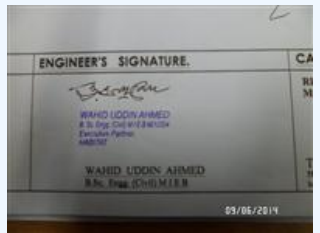

ALLIANCE
FOR BANGLADESH WORKER SAFETY

Complex :	
Number of Ancillary Levels (Stories) :	1) Two story RCC generator building: Stories above grade: 2, Stories below grade: 0, Occupied levels: 2.
Approximate Ancillary Structures Area (SF) :	1) Two story RCC generator building: 574.00 sft (Ground Floor: 287.00 sft, 1st Floor: 287.00 sft).
Number of Occupants :	Total number of occupants: 973. 1) Six story RCC main production building: 972 (Ground floor: 10, 1st floor: 244, 2nd floor: 47, 3rd floor: 335, 4th floor: 334, 5th floor: 2), 2) Two story RCC generator building: 1 (Ground floor: 1, 1st floor: 0).
Exterior Facade Description :	The building is RCC frame structure with infilled masonry wall. Exterior face of the masonry wall is clad with tiles and glasses. The main door of the building is a metal door and the windows are of sliding glass in aluminium frame. There is a basket type steel stair anchored in front of the building.
Structural System Description :	The building is a RCC structure with flat plate system. Exterior walls are of masonry. Foundation type is pile foundation. Framing system is almost regular.



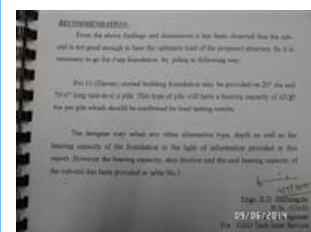
ASSESSMENT FINDINGS

Structural System Design

Question:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:		
Description:	The Certificate of Occupancy is available from CDA.	
Source of Findings:	Document Review: Document review shows that the factory has been issued a Certificate of Occupancy from CDA.	
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:	Mr. Wahid Uddin Ahmed is the Structural Engineer of Record whose IEB membership no. is M-10304 and signature is available on site.	
Source of Findings:	Document Review: Document Review reveals that the Structural Engineer on Record is Mr. Wahid Uddin Ahmed Whose IEB no. is M-10304 and the signature is available on the record.	
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:	Mr. U Tun Yine is the Architect of Record whose IAB membership no. MIAB-Y 005 and signature is available on site.	



Source of Findings:	Document Review: Document Review reveals that the Architect of Record is Mr. U Tun Yine ,whose IAB no. is MIAB-Y 005. and the signature is available on the record.
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:	2
Description:	A set of design document is available on site for review. However, the design report is not available which is required as per BNBC 2006 clause 1.9.1.1.
Source of Findings:	Document Review: Document pertaining to the relevant information unavailable.
Suggested Plan of Action:	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:	10 Aug 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:	1
Description:	A geotechnical report is available for review. However, the IEB member no. of the geotechnical engineer is not mentioned in the documents.
Source of Findings:	Document Review: Confirmed by reviewing documents.
Suggested Plan of Action:	Provide the geotechnical report with the identity of the geotechnical engineer. If the report is found to be invalid, under guidance from a qualified structural engineer arrange geotechnical investigation at close vicinity of the structure and make the report available for review.
Suggested Deadline Date:	10 Aug 2014
Standard:	Alliance Standard Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings
Question:	Can credible structural documentation indicating general conformance with





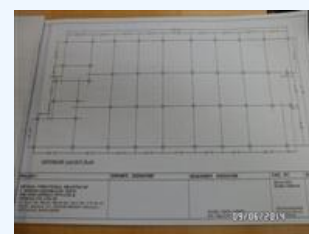
	2006 BNBC or other comparable applicable international model building code be produced?	
Priority Level:	Medium	
Non-Compliance Level:	2	
Description:	The building is constructed before 2006. However, there is no indication that the design accommodates the requirement of BNBC 2006 or any other model building code.	
Source of Findings:	Document Review: Confirmed by reviewing documnts.	
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:	10 Aug 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:		
Description:	The building was designed and constructed before 2006.	
Source of Findings:	Document Review: Document review reveals that, the building was designed and constructed before 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:	2	
Description:	There is no clear information available on the design document to understand the consideration of storm surge and wind loading in the design of the building.	
Source of Findings:	Document Review: Confirmed by reviewing documents.	



Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.	
Suggested Deadline Date:	10 Aug 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:	Has evidence of structural integrity been provided using a Preliminary Structural Assessment?	
Priority Level:	High	
Non-Compliance Level:		
Description:	There was a preliminary structural assessment carried out in this building and the report outlines that the building is safe.	
Source of Findings:	Document Review: Document review shows that, there was a preliminary structural assessment carried out in this building and the report outlines that the building is safe.	
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:	There is no evidence of previous expansion of the structure.	
Source of Findings:	Document Review: There is no extension of the building beyond the original construction., Visual Assessment: There is no extension of the building beyond the original construction.	
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 building is flat plate system.
Source of Findings:	Document Review: Document review shows that, the building is a flat plate system., Visual Assessment: Visual Assessment shows that, the building is a flat plate system.
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:	It is a regular structure both vertically and horizontally.
Source of Findings:	Document Review: Document Review shows that the structure is a regular structure vertically and horizontally. , Visual Assessment: Visual Assessment shows that the structure is a regular structure vertically and horizontally.
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:	2
Description:	The every floor slab is flat plate system and hence the lateral load path is not apparent and the redundancy is not known.
Source of Findings:	Document Review: Confirmed by reviewing documents., Visual Assessment: Confirmed visually.
Suggested Plan of Action:	Have a qualified structural engineer complete further analysis of the structure and develop a remediation plan if required.

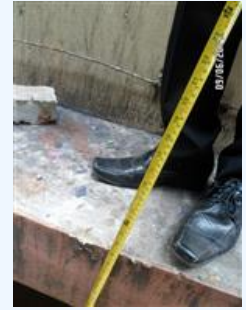




Suggested Deadline Date:	10 Aug 2014	
Standard:	Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 8.3.3. 2006 BNBC Part 6 Section 1.5	
Question:	Are the available FoS for the columns adequate based on Preliminary calculation?	
Priority Level:	High	
Non-Compliance Level:	2	
Description:	The building is approved for nine floors but at the moment it is five-story. Based on the preliminary calculations, all columns are not within the acceptable limit for the proposed nine-story building. Considered Concrete Compressive strength: 2370 Psi (as per Alliance Standard for stone chips); Rebar strength: 60 Ksi; For the existing five-story building, the FoS of columns are adequate; FoS of columns with 42 psf live load noted as follows: Central Column:2.60, Corner Column:1.93, Edge Column:2.68, The FoS of the corner columns are within the acceptable limit for existing five storied building. For proposed nine storied building, the FoS for the columns are not adequate based on the preliminary calculation; FoS of columns for 42 psf live load noted as follows: Central Column:1.45, Corner Column:1.07, Edge Column:1.49, The FoS in all columns are not within the acceptable limit for proposed nine storied building.	
Source of Findings:	Uploaded Document: Column Stress Calculation Sheet	
Suggested Plan of Action:	For further future extension: Under guidance of a qualified structural engineer arrange Detail Engineering Assessment of the structure. This assessment should be conducted prior to the proposed expansion (currently 5 levels present) and should include destructive core testing to validate the in-situ concrete compressive strength of structural elements. No extension is allowed before the detailed assessment is performed.	
Suggested Deadline Date:	10 Aug 2014	
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:	Result of ferro-scanning confirms that the number of rebars are matching with the structural design.	
Source of Findings:	Visual Assessment: Result of ferro-scanning confirms that the number of rebars are matching with the 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:	Slab thickness is 9", so the full dead load is $112.5+25(FF)=137.5$. The estimated live load is about 42 psf.
Source of Findings:	Visual Assessment: Slab thickness is measured 9", so the full dead load is $112.5+25(FF)=137.5$. The estimated 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 three plastic water on the rooftop out of which two have a capacity of 3000 liters each and the other with 1500 liters. There also is a 20'x15'x5' masonry water tank present on the rooftop. No document pertaining to the structural consideration for any of these tanks was found.
Source of Findings:	Document Review: Document pertaining to the relevant information unavailable., Visual Assessment: Confirmed visually.
Suggested Plan of Action:	Engage a qualified structural engineer to confirm and document that provisions have been made to accommodate these water tanks. If provisions have not been made, have a qualified structural engineer develop a remediation plan.
Suggested Deadline Date:	10 Aug 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/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:	
Description:	The density of operation does not exceed 42 psf.
Source of Findings:	Document Review: The document review shows that the density of operation does not exceed 42 psf. , Visual Assessment: The visual inspection shows that the density of operation 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 is found on the walls of adjacent to the stairs of 3rd floor and roof top. Water ponding is observed on the roof top. There is no maintenance program for all areas including areas with efflorescence, dampness, standing water on rooftops, and corrosion.
Source of Findings:	Document Review: Confirmed by reviewing documents., Visual Assessment: Confirmed visually.
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:	10 Aug 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 façade is free of cracking.	
Source of Findings:	Visual Assessment: Visual inspection shows that there is no cracking in the exterior façade.	
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:	Visual Assessment: Visual inspection supported by document review shows that, no expansion joint in the structure.	
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: Visual assessment supported by document review shows that there is no expansion joint in the building.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:		





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 sign of water intrusion, ponding or dampness due to lack of performance of the façade.	
Source of Findings:	Visual Assessment: Visual inspection shows that there is no sign of water intrusion, ponding or dampness due to lack of performance of the façade.	
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 are satisfactory. However there are some minor cracks at the ceiling of 4th floor and 3rd floor which are may be due to the shrinkage of concrete.	
Source of Findings:	Visual Assessment: Visual inspection shows that, the performance of the key structural elements are 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:	The structural system is free of settlement, cracking, excessive perimeter separation etc. which shows no noticeable settlement has occurred.	
Source of Findings:	Visual Assessment: Visual inspection reveals that, the structural system is free	





	of settlement, cracking, excessive perimeter separation etc. which shows no noticeable settlement has occurred.	
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 structural system is free of deflections (sagging), rotations (twisting), perceivable vibrations, or other noticeable movements of the structure.	
Source of Findings:	Visual Assessment: The structural system is free of deflections (sagging), rotations (twisting), perceivable vibrations, or other noticeable movements 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 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 visible sign of distress or crack that may indicate lack of performance or over-stress of the lateral load-carrying system.	
Source of Findings:	Visual Assessment: Visual assessment shows that, there is no visible sign of distress or crack that may indicate lack of performance or over-stress of the 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:		
Description:	There is no cracks 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 reveals that, there is 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:		
Suggested Deadline Date:		
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:	Visual Assessment: Visual inspection supported by 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:	Columns & slabs of ground level were constructed with stone chips whereas columns & slabs of elevated levels are of MCAC.	
Source of Findings:	Visual Assessment: Visually Confirmed	



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:	3	
Description:	Columns & slabs of ground level were constructed with stone chips whereas columns & slabs of elevated levels are of MCAC. The structural members constructed with MCAC have not been investigated by an appropriate program of in-situ testing and representative destructive testing or core samples. The Fos calculation of columns , show overstress for the proposed 9 storied building, considering the minimum concrete compressive strength for stone chips (2370 psi).	
Source of Findings:	Visual Assessment: Confirmed visually.	
Suggested Plan of Action:	For further future extension: Under guidance from a qualified structural engineer arrange Detail Engineering Assessment of the structure. This assessment should be conducted prior to the proposed expansion (currently 5 levels present) and should include destructive core testing to validate the in-situ concrete compressive strength of structural elements constructed with MCAC and stone chips. No extension is allowed before the detailed assessment is performed.	
Suggested Deadline Date:	10 Aug 2014	
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:	2	
Description:	The roof of the building is made of MCAC aggregate but no protective sealing is available.	
Source of Findings:	Visual Assessment: Confirmed visually.	
Suggested Plan of Action:	Provide a protective coating at the structural elements constructed with MCAC exposed to rainfall or other sources of water. Have protective coating approved by the Alliance or a qualified structural engineer. Otherwise, provide	



	2% slope on the exposed surface to prevent accumulation of water.	
Suggested Deadline Date:	10 Aug 2014	
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 member in the building.	
Source of Findings:	Visual Assessment: Visual inspection shows that, there is no structural steel member in the building.	
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:	Post-tensioned reinforced concrete systems or elements were not used in the building.	
Source of Findings:	Document Review: Document Review shows that, Post-tensioned reinforced concrete systems or elements were not used in the building., Visual Assessment: Visual assessment shows that, post-tensioned reinforced concrete systems or elements were not used in the 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:	There is no sign of progressive distress visible in the structure.
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:	Accessories racks on the second floor, third floor and racks and lockers on 1st floor are not braced to resist earthquake force. There are two 3000 liter water tanks and one 1500 liter plastic water tank present on the roof of the factory building, which are not braced or anchored properly.
Source of Findings:	Visual Assessment: Confirmed visually.
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:	21 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 ongoing.
Source of Findings:	Visual Assessment: Visual inspection shows that, no renovation or expansion work is ongoing.





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:	3
Description:	There is no load plan available showing the actual maximum operational loading that is allowable.
Source of Findings:	Document Review: Document pertaining to the relevant information unavailable.
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:	10 Aug 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:	3
Description:	Floor load plans are not posted.
Source of Findings:	Visual Assessment: Confirmed visually.
Suggested Plan of Action:	Have a qualified structural engineer prepare load plans including the information required in Section 8.20 of the Alliance Standard and they should be visibly posted on all levels of all buildings.
Suggested Deadline Date:	10 Aug 2014
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:	There is no load plan available showing the actual maximum operational loading that is allowable.	
Source of Findings:	Document Review: Document pertaining to the relevant information unavailable.	
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 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:	Visual Assessment: Confirmed visually.	
Suggested Plan of Action:	Have a qualified structural engineer prepare a load plan for each floor and 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:	10 Aug 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: Document unavailable.	
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:	27 Jul 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: Confirmed by reviewing documents.	
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:	27 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:	Post-tensioned reinforced concrete systems or elements were not used in the building.	
Source of Findings:	Document Review: Document Review shows that, Post-tensioned reinforced concrete systems or elements were not used in the building., Visual Assessment: Visual assessment shows that, post-tensioned reinforced concrete systems or elements were not used in the building.	
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	