

INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Kenpark Bangladesh Apparel (Pvt) Limited (K-5)**
Address: **Plot #14/23, Sector #2 Karnaphuli Export Processing
Zone Chittagong Chittagong Bangladesh**
Assessor: **Emkay Enterprises LTD**
Date: **26 Feb 2014**





Introduction to the Report

The following report contains a site profile and summary of non-conformities identified during an onsite assessment commissioned by the Alliance for Bangladesh Worker Safety (Alliance) and conducted by a third-party Qualified Assessment Firm (QAF). The assessment was conducted against the Alliance for Bangladesh Worker Safety Assessment Protocols (APs) and Fire Safety and Structural Integrity Standard, which is harmonized with the factory assessment guidelines developed by Bangladesh University of Engineering and Technology (BUET) for the Bangladesh National Tripartite Plan of Action (NTPA). The goal of the Alliance process is to provide clear and practical technical requirements by which Bangladeshi Ready Made Garment (RMG) Factories producing for Alliance members may be consistently and fairly evaluated for fire, structural, and electrical safety in a non-duplicative manner. Each assessment will prompt action plans that will be used by RMG factories to systematically and sustainably improve safety conditions for garment workers. Beyond tracking and reporting on action steps taken in a transparent manner, the Alliance organization and its members will seek to further support factory improvements through technical assistance, training, implementation support for functional Worker Committees, and in some cases financial assistance and wage support for workers if factories are closed for remediation.

The contents of the report do not constitute a guarantee of compliance with the applicable laws, the Alliance Standard or the absolute or continued safety against fire, electrical and/or structural integrity issues that may lead to injury or loss of life. The report is designed to provide a non-exhaustive summary of risk issues, based on a limited sampling and duration of time onsite by the named QAF. Neither the QAF nor the Alliance can certify or guarantee the quality, outcome, or effectiveness of actions taken in response to the report.

For more information and report feedback please go to: www.bangladeshworkersafety.org.





GENERAL INFORMATION

General Information	
Factory Name:	Kenpark Bangladesh Apparel (Pvt) Limited (K-5)
Address:	Plot #14/23, Sector #2 Karnaphuli Export Processing Zone Chittagong Chittagong Bangladesh
Country:	Bangladesh
Province:	Chittagong
City:	Chittagong
Zip Code:	4204
Audit Duration:	1 Days
Re-Audit:	Re-Audit After 0 Months
Draft Report Date :	4/7/2014
Final Report Date :	12/8/2014
Are all Action Items From Previous Assessment Completed?:	N/A
Buildings in Complex :	2 Main Buildings 1 Ancillary Building
Number of Building Levels (Stories) :	Building-1 (Production Building-A): 3-Storied Building with Canteen Shed on the Roof; Building-2 (Production Building-B): 3-Storied Building; Building-3 (Corridor & Utility Building): 4-Storied Corridor and 2-Storied Utility Building (Ground Floor Double height).
Approximate Building Area (SF) :	Building-1 (Production Building-A): 120,514 SF; Building-2 (Production Building-B): 97,206 SF.
Date of Building Construction :	Building-1 (Production Building-A): 2012-2013; Building-2 (Production Building-B): 2012-2013; Building-3 (Corridor & Utility Building): 2012-2013.
Date of Last Building Renovation/Addition :	No renovations or additions have been performed.
Is the Building mixed use?:	No
Ancillary Structures in Complex :	Corridor & Utility Building
Number of Ancillary Levels (Stories) :	4 storied connective corridor and 2 storied utility building.

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Approximate Ancillary Structures Area (SF) :	20,856 SF
Number of Occupants :	1946
Exterior Facade Description :	Brick masonry wall with interior and exterior plaster finish and paint.
Structural System Description :	Building-1 (Production Building-A): RCC Structure with Steel Canteen shed on the Roof, with cast pile foundation. Building-2 (Production Building-B): RCC Frame Structure with cast pile foundation; Building-3 (Corridor & Utility Building): RCC Frame Structure with Pre-cast Pile.



ASSESSMENT FINDINGS

Structural System Design

Question:	Are Certificates of Occupancy available for review?	
Priority Level:	Low	
Non-Compliance Level:		
Description:	The factory is in EPZ area. EPZ authority provided approval for the factory.	
Source of Findings:	Document Review: Occupancy Certificate Found.	
Suggested Plan of Action:	N/A	
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:	Building-1 (Production Building-A) and Building-2 (Production Building-B): Engr.S.K Barua, B.sc .Engg. (Civil) FIEB-7872, C.D.A Registration :0021, Chief Engineer, M/S Sanco Trade International. Building-3 (Corridor & Utility Building): Md. Syied Mahbub Morshed, Executive Engineer, PWD Design Division-1, Public Works Department (PWD), Purta Bhaban, Dhaka-1000, Bangladesh.	
Source of Findings:	Document Review: Found on provided documents.	
Suggested Plan of Action:	N/A	
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:	As-built Architect for all Buildings: W P INDIKA DE SILVA	



Source of Findings:	Document Review: Found on As-built Drawings	
Suggested Plan of Action:	N/A	
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:		
Description:	Credible Structural design documents have been found for all of the Buildings.	
Source of Findings:	Document Review: Credible Structural design documents found.	
Suggested Plan of Action:	N/A	
Suggested Deadline Date:		
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:	Geotechnical Report available for review and kept on site. Building-1 & 2: Cast Pile and Building-3: Pre-cast Pile. Calculated soil bearing capacity or pile capacity = 30 ton per pile for 20" dia pile (from soil report).	
Source of Findings:	Document Review: Soil test report found, Uploaded Document: Soil test report	
Suggested Plan of Action:	N/A	
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:	2	
Description:	Reference Alliance Standards Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings: Building-1 and Building-2: The structural drawings do not mention any BNBC code or other code references. Building-3: The structural drawings mention BNBC 1993, IBC 2000 and ACI 2008 code references.	
Source of Findings:	Document Review: Partially found.	
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 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:	Alliance Standards Part 8 Section 8.17 Design for Lateral Loads and 2006 BNBC Part 6 Section 1.5: All the Buildings were constructed after 2006, but structural drawings don't mention any 2006 BNBC code references. But Building-3: The structural drawings mention BNBC 1993, IBC 2000 and ACI 2008 code references.	
Source of Findings:	Document Review: Not found.	
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 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:	For Building-1 & 2: No BNBC code references were found to show compliance with the requirements of wind loading and storm surge loadings as detailed in BNBC Part 6 Section 1.5.3. For Building-3: The structural drawings mention BNBC 1993, IBC 2000 and ACI 2008 code references.	



Source of Findings:	Document Review: Partially found.	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.	
Suggested Deadline Date:	10 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:	Has evidence of structural integrity been provided using a Preliminary Structural Assessment?	
Priority Level:	High	
Non-Compliance Level:		
Description:	An assessment report was found during the assessment, provided by Bureau of Research, Testing and Consultancy, Department of Civil Engineering, Chittagong University of Engineering and Technology (CUET), based on the factory design documents only.	
Source of Findings:	Document Review: Assessment report was found.	
Suggested Plan of Action:	N/A	
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:	No expansion has been done.	
Source of Findings:	Document Review: No evidence of expansion found during assessment	
Suggested Plan of Action:	N/A	
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:	All Buildings are Moment Resisting Frame System structures
Source of Findings:	Document Review: Structural System found.
Suggested Plan of Action:	N/A
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:	Regular Structure
Source of Findings:	
Suggested Plan of Action:	N/A
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:	From the Lateral load carrying system (redundancy) analysis, it has been found that Building-3 (4 Storied Connecting Corridor & 2 Storied Utility Building) is not compliant for seismic load.
Source of Findings:	Document Review: Structural analysis, Visual Assessment: Physical inspection
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:	15 Sep 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:		
Description:	Building-1: FoS of the columns (based on live load of 42 psf, and concrete compressive strength of 2045 psi per the Alliance Standard minimum) are adequate based on preliminary calculations. Central column= 4.30; Corner column= 6.83; Edge column= 4.59. Building-2: FoS of the columns (based on live load of 42 psf, and concrete compressive strength of 2370 psi per the Alliance Standard minimum) are adequate based on preliminary calculations. Central column= 4.58; Corner column= 7.22; Edge column= 4.85, Building-3: FoS of the columns (based on live load of 42 psf, and concrete compressive strength of 2045 psi per the Alliance Standard minimum) are adequate based on preliminary calculations. Central column= 2.37; Corner column= 3.45; Edge column= 3.82.	
Source of Findings:	Uploaded Document: FoS calculation spreadsheets	
Suggested Plan of Action:	N/A	
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 matched with provided design drawings.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014	
Suggested Plan of Action:	N/A	
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 Building-1, 2 & 3: Dead load for slab and floor finish is 93.75 psf and live load found less than 20psf in each floor except ground floor. But the Cooling tower found in the roof of Utility portion of Building-3, which may create overloading upon the slab.	
Source of Findings:	Visual Assessment: Physical verification	
Suggested Plan of Action:	N/A	
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:	The Cooling tower found on the roof of the Utility portion of Building-3 may cause overloading of the slab.	
Source of Findings:	Visual Assessment: Visually observed	
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:	10 Oct 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:	Assessment Team did not observed any live load which may exceed 42 psf.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Physical inspection	



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 and efflorescence were observed in the soffit of the slab and beam surfaces at the ground floor of Building-2 (Production Building-B).	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Physical inspection	
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 Oct 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:	No cracks were found in the facade for all the Buildings.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Physical inspection	
Suggested Plan of Action:	N/A	
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:	No expansion joints found.	



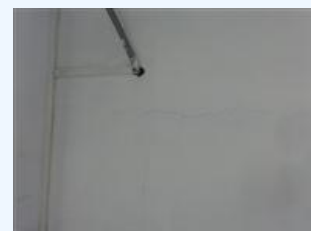
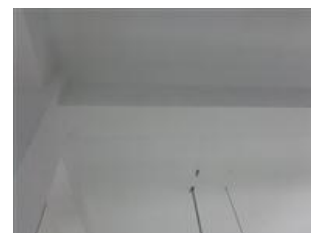
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Physical inspection	
Suggested Plan of Action:	N/A	
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.2 Structural Integrity of Existing Factory Buildings	
Question:	Is expansion joint material free from cracking and other forms of deterioration?	
Priority Level:	Low	
Non-Compliance Level:		
Description:	No expansion joints found.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Physical inspection	
Suggested Plan of Action:	N/A	
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:	Water intrusion and ponding due to lack of performance of the façade system was not found.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Physical inspection	
Suggested Plan of Action:	N/A	
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:	2	



Description:	Slender Columns were found in every Building, but no signs of distress were observed in the columns. A portion of Building-3 was double height. The double height columns should be checked for slenderness.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Physical inspection	
Suggested Plan of Action:	Engage a qualified structural engineer to confirm structural performance of the structure.	
Suggested Deadline Date:	15 Sep 2014	
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:	No sign of foundation settlement was found.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Physical inspection	
Suggested Plan of Action:	N/A	
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:	No noticeable movements found.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Onsite inspection	
Suggested Plan of Action:	N/A	
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:	3
Description:	Building-1 (Production Building-A): Hairline vertical cracks were found in the roof beams. This type of crack was observed in several roof beams. This may be due to shrinkage of roof beam concrete.
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Onsite inspection
Suggested Plan of Action:	Engage a qualified structural engineer to provide additional investigation into the areas of distress, separations, or cracking and provide a remediation plan if required.
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:	2
Description:	Building-3 (Corridor & Utility Building): Vertical crack in the 1st floor wall.
Source of Findings:	Photograph: Crack in Wall, Visual Assessment: Site Visit: 26 Feb, 2014 Onsite inspection
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:	10 Oct 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 previous repairs done.
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Onsite inspection





Suggested Plan of Action:	N/A
Suggested Deadline Date:	
Standard:	
Question:	Was masonry-chip aggregate concrete (MCAC) used in the construction of the building?
Priority Level:	
Non-Compliance Level:	
Description:	Reference Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC): Building-1 (Production Building-A): Masonry Chip Aggregate Concrete (investigating 3 sample columns); Building-2 (Production Building-B): Stone Chip Aggregate Concrete (investigating 3 sample columns); Building-3 (Corridor & Utility Building): Masonry Chip Aggregate Concrete.
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Onsite inspection
Suggested Plan of Action:	Have a qualified structural engineer assess the durability aspects for Building-1 and Building-3 as suggested in Alliance Standard Part 7 Section 7.2 and take appropriate remedial measures.
Suggested Deadline Date:	10 Oct 2014
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:	2
Description:	Reference Alliance Standards Part 7 Building Materials Section 7.2 Masonry-chip aggregate concrete (MCAC): Building-1 & Building-3: MCAC was used in the construction of the buildings. No in-situ testing has been done to check the concrete strength.
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Onsite inspection
Suggested Plan of Action:	Under guidance of a qualified structural engineer, perform investigation by an appropriate program of in-situ testing and representative destructive testing or core samples for Building-1 and Building-3.
Suggested Deadline Date:	10 Oct 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 exposed roof portions of Building-1 and Building-3 have not been sealed with a protective coating.	
Source of Findings:	Photograph: Exposed roof , Visual Assessment: Site Visit: 26 Feb, 2014 Onsite inspection	
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.	
Suggested Deadline Date:	10 Oct 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:	All the Structural Steel members are free of corrosion, physical damage or other types of deterioration.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Onsite inspection	
Suggested Plan of Action:	N/A	
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:	Not Applicable.	



Source of Findings:		
Suggested Plan of Action:	N/A	
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 distress.	
Source of Findings:	Visual Assessment: Site Visit: 26 Feb, 2014 Onsite inspection	
Suggested Plan of Action:	N/A	
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:	At all Buildings: The suspended steam pipes were not adequately braced to resist earthquake forces.	
Source of Findings:	Photograph: Suspended steam pipes, Visual Assessment: Physical inspection	
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:	10 Oct 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 addition done currently.
Source of Findings:	Document Review: No documents of renovation or addition found., Visual Assessment: Site Visit: 26 Feb, 2014
Suggested Plan of Action:	N/A
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:	1
Description:	Floor load plans have not been prepared for all the Buildings according to Alliance Standards Part 8 Structural Design Section 8.10 Floor Loading Plans (Load Plans).
Source of Findings:	Document Review: Floor Load plan not found.
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 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:	1
Description:	No floor load plans were posted in the factory according to Alliance Standard Part 8 Section 8.20.5.3.
Source of Findings:	Visual Assessment: As per Site Visit on 26 Feb, 2014, Floor load plans were not found
Suggested Plan of Action:	Have a qualified structural engineer prepare load plans including the information required in Section 8.20 of the Alliance Standard.
Suggested Deadline Date:	10 Oct 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:	No floor load plan was available.	
Source of Findings:	Visual Assessment: Floor load plan was not available.	
Suggested Plan of Action:	N/A	
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:	1	
Description:	Storage areas for work materials and work products are not marked according to Alliance Standards Part 8 Structural Design Section 8.11 Floor Load Markings.	
Source of Findings:	Visual Assessment: Markings indicating acceptable loading limits were not found.	
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:	10 Oct 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:	2	
Description:	No program is in place according to 2006 BNBC Part 6 Chapter 1 Section 1.4.6 and Alliance Standard Part 13 Section 13.7 and Part 8 Section 8.9.	
Source of Findings:	Document Review: Relevant document not found	
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:	10 Oct 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:	1	
Description:	For all of the Buildings, no factory load manager was found according to Alliance Standards Part 8 Section 8.9 Factory Load Manager.	
Source of Findings:	Document Review: Relevant document not found, Visual Assessment: Factory load manager not available	
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:	10 Oct 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:	Not Applicable.	
Source of Findings:		
Suggested Plan of Action:		
Suggested Deadline Date:		
Standard:	Alliance Standard Part 8 Section 8.26 Durability and Maintenance	