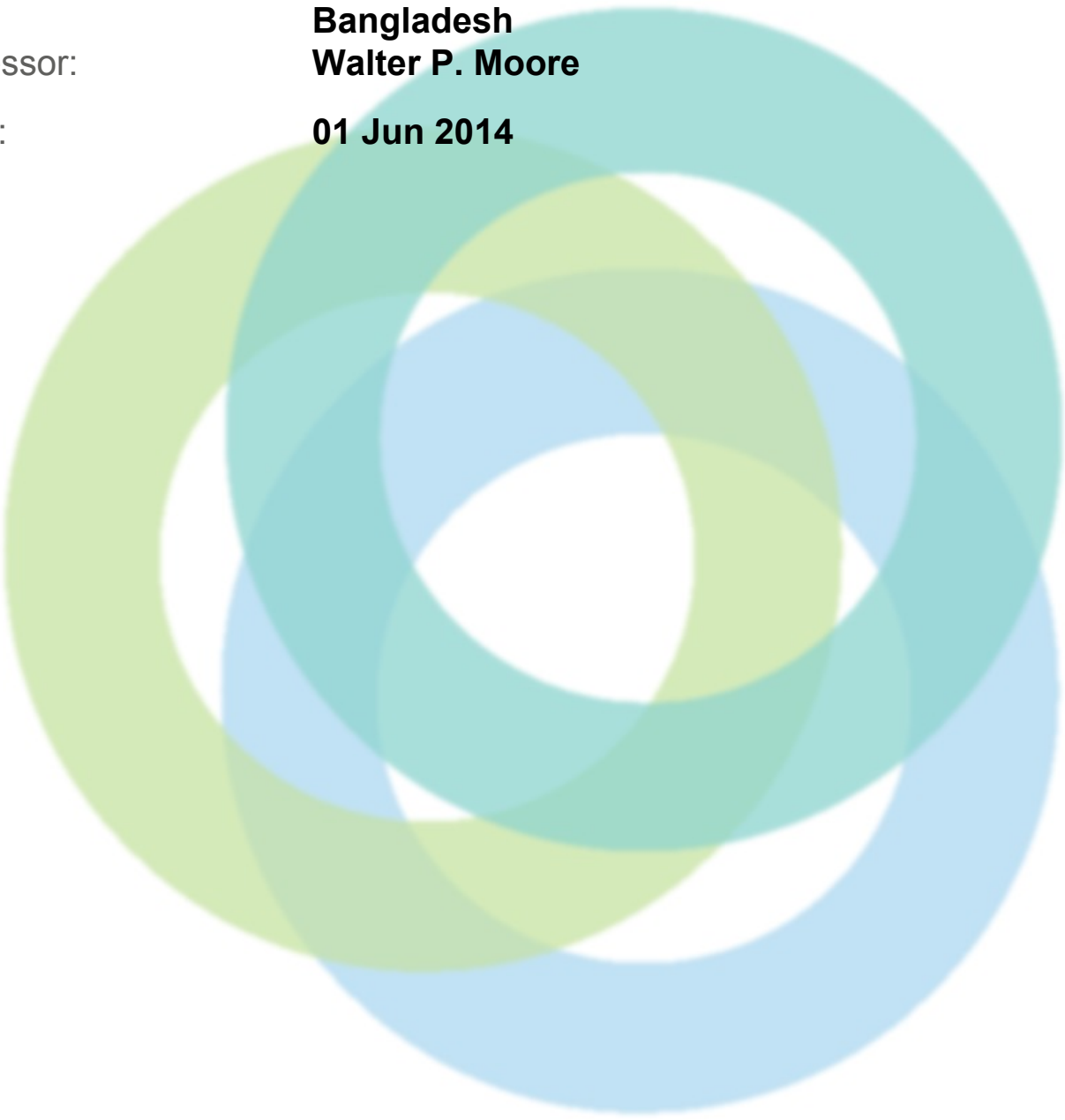


# INITIAL STRUCTURAL INTEGRITY ASSESSMENT REPORT (SIAR)

Factory Name: **Ananta Casualwear Ltd.**  
Address: **Kunia, Targach, K.B Bazar, Gazipur Gazipur Dhaka  
Bangladesh**  
Assessor: **Walter P. Moore**  
Date: **01 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](http://www.bangladeshworkersafety.org).



Factory Name: **Ananta Casualwear Ltd.**

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**ALLIANCE**  
FOR BANGLADESH WORKER SAFETY

## GENERAL INFORMATION

### General Information

|                                                           |                                                                    |
|-----------------------------------------------------------|--------------------------------------------------------------------|
| Factory Name:                                             | Ananta Casualwear Ltd.                                             |
| Address:                                                  | Kunia, Targach, K.B Bazar, Gazipur Gazipur Dhaka Bangladesh        |
| Country:                                                  | Bangladesh                                                         |
| Province:                                                 | Dhaka                                                              |
| City:                                                     | Gazipur                                                            |
| Zip Code:                                                 |                                                                    |
| Audit Duration:                                           | 1 Days                                                             |
| Re-Audit:                                                 | Re-Audit After 0 Months                                            |
| Draft Report Date :                                       | 6/1/2014                                                           |
| Final Report Date :                                       | 6/13/2014                                                          |
| Are all Action Items From Previous Assessment Completed?: | No                                                                 |
| Buildings in Complex :                                    | 5; Main Factory Building, Ancillary Buildings and Other Structures |
| Number of Building Levels (Stories) :                     | Main Bldg - G+7 All Ancillary - G+R                                |
| Approximate Building Area (SF) :                          | 194150                                                             |
| Date of Building Construction :                           | 1993-1994                                                          |
| Date of Last Building Renovation/Addition :               | 1997                                                               |
| Is the Building mixed use?:                               | No                                                                 |
| Ancillary Structures in Complex :                         | 2                                                                  |
| Number of Ancillary Levels (Stories) :                    | Ground+Roof                                                        |
| Approximate Ancillary                                     | 8721                                                               |

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**ALLIANCE**  
FOR BANGLADESH WORKER SAFETY

|                                 |                                                                                                                        |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Structures Area (SF) :          |                                                                                                                        |
| Number of Occupants :           | 3400                                                                                                                   |
| Exterior Facade Description :   | Plastered masonry walls tightly abutted against building frame with clay tile cladding and alucobond covers over ducts |
| Structural System Description : | Reinforced Concrete Frame                                                                                              |



## ASSESSMENT FINDINGS

### Structural System Design

|                           |                                                                                         |                                                                                       |
|---------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Question:                 | Are Certificates of Occupancy available for review?                                     |                                                                                       |
| Priority Level:           | Low                                                                                     |                                                                                       |
| Non-Compliance Level:     | 1                                                                                       |                                                                                       |
| Description:              | No Certificate of Occupancy was available for review                                    |                                                                                       |
| Source of Findings:       |                                                                                         |                                                                                       |
| Suggested Plan of Action: | Provide Certificates of Occupancy for review.                                           |                                                                                       |
| Suggested Deadline Date:  | 15 Sep 2014                                                                             |                                                                                       |
| Standard:                 | Alliance Standard Part 8 Section 8.3 Preliminary Structural Assessment                  |                                                                                       |
| Question:                 | Structural Engineer of Record                                                           |                                                                                       |
| Priority Level:           |                                                                                         |                                                                                       |
| Non-Compliance Level:     |                                                                                         |                                                                                       |
| Description:              | Company Name - The Design Center                                                        |                                                                                       |
| Source of Findings:       | Document Review: As observed from Structural documents                                  |                                                                                       |
| 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:              | Company Name could not be ascertained from the available documents provided for review. |                                                                                       |
| Source of Findings:       | Document Review: As observed from Architectural drawings                                |                                                                                       |
| 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:              | Structural drawings reviewed are typical and do not accurately reflect the current building configurations. Additionally details for the inaccessible Structural Steel roof is not noted from these drawings. |                                                                                       |
| Source of Findings:       | Document Review: As observed from Structural drawings reviewed                                                                                                                                                |                                                                                       |
| 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:  |                                                                                                                                                                                                               |                                                                                       |
| 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:              | The geotechnical report reviewed is for tests conducted at close vicinity of the structure. The original report from 1993 is not available for review                                                         |                                                                                       |
| Source of Findings:       | Document Review: As observed from investigation report prepared by 'GRIHAYAN LTD.' and 'Bijoy Soil Investigator' (Mar 2009)                                                                                   |                                                                                       |
| 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:     | 3                                                                                                                                                                                                             |                                                                                       |



|                           |                                                                                                                                                                                                                                                                                     |  |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Description:              | Various parameters like slab thickness, design code, design live load, seismic and wind parameters adopted are not indicated on the structural drawings made available for review. These would be necessary to validate conformance of design to 2006 BNBC or equivalent reference. |  |
| Source of Findings:       | Document Review: As observed from structural drawings provided for review.                                                                                                                                                                                                          |  |
| 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:  | 15 Sep 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:              | Structure was designed and built in 1993-1994                                                                                                                                                                                                                                       |  |
| Source of Findings:       | Document Review: As observed from documents reviewed                                                                                                                                                                                                                                |  |
| Suggested Plan of Action: | Have a qualified structural engineer document compliance with the seismic and wind requirements stated in the 2006 BNBC.                                                                                                                                                            |  |
| 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:     | 3                                                                                                                                                                                                                                                                                   |  |
| Description:              | It cannot be determined from available documentation if the building is designed for the recommended parameters for wind loading and storm surge as defined in BNBC Part 6 Sec. 1.5.3                                                                                               |  |
| Source of Findings:       |                                                                                                                                                                                                                                                                                     |  |
| Suggested Plan of Action: | Engage a qualified structural engineer to confirm satisfactory structural performance of the buildings under wind loading.                                                                                                                                                          |  |
| Suggested Deadline Date:  | 15 Sep 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:              |                                                                                                                                                                                                                                          |                                                                                      |
| Source of Findings:       |                                                                                                                                                                                                                                          |                                                                                      |
| 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:     | 1                                                                                                                                                                                                                                        |                                                                                      |
| Description:              | Since it could not be ascertained if the original design intent was for a six or seven storied construction, the current provision of a 7th floor as a prefabricated structural steel frame should be evaluated by a competent engineer. |                                                                                      |
| Source of Findings:       |                                                                                                                                                                                                                                          |                                                                                      |
| Suggested Plan of Action: | Have a qualified structural engineer complete an analytical evaluation of the structural impact of the change in frame configuration at roof level                                                                                       |                                                                                      |
| Suggested Deadline Date:  | 15 Sep 2014                                                                                                                                                                                                                              |                                                                                      |
| 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:              | Beam-Column Moment resisting system                                                                                                                                                                                                      |                                                                                      |



|                           |                                                                                                                                                                                        |                                                                                       |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Source of Findings:       |                                                                                                                                                                                        |                                                                                       |
| 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:              | Building geometry is rectangular with no significant physical discontinuities in plan and vertical configurations except for change in configuration to structural steel at roof level |                                                                                       |
| Source of Findings:       |                                                                                                                                                                                        |                                                                                       |
| 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:              |                                                                                                                                                                                        |                                                                                       |
| Source of Findings:       |                                                                                                                                                                                        |                                                                                       |
| 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:              | Since material strength of concrete cannot be validated due to unavailability of any material testing data a concrete strength of 2400 psi is being considered for column concreted using stone chip aggregates. FoS calculated for corner column is 2.39, FoS calculated for edge columns is 2.02, and FoS observed for typical central column is 1.87.                          |  |
| Source of Findings:       |                                                                                                                                                                                                                                                                                                                                                                                   |  |
| 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 and verified against the number of bars indicated on structural drawings.                                                                                                                                                                                           |  |
| Source of Findings:       |                                                                                                                                                                                                                                                                                                                                                                                   |  |
| 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:     | 3                                                                                                                                                                                                                                                                                                                                                                                 |  |
| Description:              | Dead loads observed on the building are primarily due to self weight of the structure, weight of finishes and suspended service lines. The design live load could not be ascertained from available documents and the claimed live load capacity of 100 psf could not be verified. Unless validated, a minimum design live load of 42 psf should be assumed for floor load plans. |  |
| Source of Findings:       |                                                                                                                                                                                                                                                                                                                                                                                   |  |
| Suggested Plan of         | Engage a qualified structural engineer to determine the live load carrying                                                                                                                                                                                                                                                                                                        |  |



|                           |                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Action:                   | capacity of various elevated floors.                                                                                                                                                                                                                                                                                                                                                                          |  |
| 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:              | Cutting machines were observed to exert a concentrated load at supports. All such instances should be verified against load plans prepared.                                                                                                                                                                                                                                                                   |  |
| Source of Findings:       |                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| 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:  | 15 Sep 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 <sup>2</sup> (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:     | 2                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Description:              | The design live load could not be ascertained from available documents and the verbally specified live load capacity of 100 psf by the factory representatives could not be verified. Unless validated, a minimum design live load of 42 psf should be assumed for floor load plans. Restrictions on stacking height of finished goods boxes should be based on the above mentioned minimum design live load. |  |
| Source of Findings:       |                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| Suggested Plan of Action: | Have a qualified structural engineer confirm that capacity to support the load is available. Load Plans complying with Alliance Standard Part 8 Section 8.20.4.3 should also be developed.                                                                                                                                                                                                                    |  |
| Suggested Deadline Date:  | 15 Sep 2014                                                                                                                                                                                                                                                                                                                                                                                                   |  |



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|-----------|-------------------------------------------------------------------|
| 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:     | 1                                                                                                                                             |
| Description:              | Water Intrusion and lack of anti corrosive paint over structural steel members in stairwells with water tanks above should be remedied.       |
| Source of Findings:       | Visual Assessment: As observed during visual assessment                                                                                       |
| Suggested Plan of Action: | Schedule periodic maintenance of vulnerable areas and address all such open issues to avoid recurrence.                                       |
| Suggested Deadline Date:  | 15 Sep 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 of concern were observed over the exterior façade |
| Source of Findings:       | Visual Assessment: As observed during visual assessment     |
| 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:              | Expansion joints over exterior façade follow similar location to the building expansion joint. Cracks observed on this area were noted to be over mortar filled within this joint |
| Source of Findings:       | Visual Assessment: As observed during visual assessment                                                                                                                           |
| Suggested Plan of Action: |                                                                                                                                                                                   |





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|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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?                                                                                                                                                                                                                                                                                   | <br> |
| Priority Level:           | Low                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                            |
| Non-Compliance Level:     | 2                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                            |
| Description:              | No compressible filler material or equivalent was observed within the expansion joint. At all locations excess mortar from floor finishes and plastering were noted to be filled inside the expansion joint. Due to building movements this mortar filling and excess plastering are showing cracks and seem susceptible to fall posing a hazard to factory staff. |                                                                                                                                                                            |
| Source of Findings:       | Visual Assessment: As observed during visual assessment                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                            |
| Suggested Plan of Action: | Remove deteriorated expansion joint filling and provide new approved material at the expansion joint duly covered with expandable sheeting.                                                                                                                                                                                                                        |                                                                                                                                                                            |
| Suggested Deadline Date:  | 15 Sep 2014                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                            |
| 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:              |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                            |
| Source of Findings:       |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                            |
| 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:              |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                            |



|                           |                                                                                                                                                           |  |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Source of Findings:       |                                                                                                                                                           |  |
| 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:              |                                                                                                                                                           |  |
| Source of Findings:       |                                                                                                                                                           |  |
| 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:              |                                                                                                                                                           |  |
| Source of Findings:       |                                                                                                                                                           |  |
| 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                                                                                                                                                      |  |

Factory Name: **Ananta Casualwear Ltd.**

Address: **Kunia, Targach, K.B Bazar, Gazipur Gazipur Dhaka Bangladesh**

Assessor: **Walter P. Moore**

Date: **01 Jun 2014**



**ALLIANCE**  
FOR BANGLADESH WORKER SAFETY

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| Non-Compliance Level:     |                                                                                                                     |  |
| Description:              |                                                                                                                     |  |
| Source of Findings:       |                                                                                                                     |  |
| 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:              |                                                                                                                     |  |
| Source of Findings:       |                                                                                                                     |  |
| 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:              |                                                                                                                     |  |
| Source of Findings:       |                                                                                                                     |  |
| Suggested Plan of Action: |                                                                                                                     |  |
| Suggested Deadline Date:  |                                                                                                                     |  |
| Standard:                 |                                                                                                                     |  |
| Question:                 | Was masonry-chip aggregate concrete (MCAC) used in the construction of the building?                                |  |
| Priority Level:           |                                                                                                                     |  |



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| Non-Compliance Level:     |                                                                                                                                                                                                                                                                                  |                                                                                       |
| Description:              | It was verbally informed that MCAC has been used for all beams and slabs while stone chip aggregates have been utilized for columns. Due to lack of information on the structural drawings reviewed about gradation and concrete specifications the above could not be verified. |                                                                                       |
| Source of Findings:       | Worker Interviews: As verbally informed by the factory representatives                                                                                                                                                                                                           |                                                                                       |
| Suggested Plan of Action: | Have a qualified structural engineer assess the durability aspects as suggested in Alliance Standard Part 7 Section 7.2 and take appropriate remedial measures.                                                                                                                  |                                                                                       |
| 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:              | No material test reports were evidence to validate the concrete specifications and attainment of targeted strength for MCAC used in construction of the building.                                                                                                                |                                                                                       |
| Source of Findings:       |                                                                                                                                                                                                                                                                                  |                                                                                       |
| Suggested Plan of Action: | Destructive or Non destructive tests should be undertaken on representative structural members under the guidance of an Alliance certified or qualified structural engineer.                                                                                                     |                                                                                       |
| Suggested Deadline Date:  | 15 Sep 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:     |                                                                                                                                                                                                                                                                                  |                                                                                       |



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| Description:              | All slabs constructed with MCAC were noted to be protected with a finishing mortar layer and floor tiles.                |  |
| Source of Findings:       | Visual Assessment: As observed during visual assessment                                                                  |                                                                                     |
| 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:              |                                                                                                                          |                                                                                     |
| Source of Findings:       |                                                                                                                          |                                                                                     |
| 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:              | No Post-tensioned member observed in the structure.                                                                      |                                                                                     |
| Source of Findings:       |                                                                                                                          |                                                                                     |
| Suggested Plan of Action: |                                                                                                                          |                                                                                     |
| Suggested Deadline Date:  |                                                                                                                          |                                                                                     |
| Standard:                 | Not Applicable                                                                                                           |                                                                                     |
| Question:                 | Is the structure free from any major/progressive distress?                                                               |                                                                                     |
| Priority Level:           | High                                                                                                                     |                                                                                     |



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| Non-Compliance Level:     |                                                                                                                                                                                                                                                                                              |
| Description:              |                                                                                                                                                                                                                                                                                              |
| Source of Findings:       |                                                                                                                                                                                                                                                                                              |
| 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:              | All unbraced suspended electrical trays, pipes and other service lines are to be properly anchored and braced. Material storage racks at all levels were observed to be unbraced. These racks should be anchored against the floor or wall to prevent tipping hazard during a seismic event. |
| Source of Findings:       | Visual Assessment: As observed during visual assessment                                                                                                                                                                                                                                      |
| 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:  | 15 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:              |                                                                                                                                                                                                                                                                                              |
| Source of Findings:       |                                                                                                                                                                                                                                                                                              |
| Suggested Plan of Action: |                                                                                                                                                                                                                                                                                              |
| Suggested Deadline Date:  |                                                                                                                                                                                                                                                                                              |
| Standard:                 | Alliance Standard Part 9 Construction Practices and Safety.                                                                                                                                                                                                                                  |





## Structural Safety Programs

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|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Question:                 | Have Load Plans been prepared for each floor documenting the actual maximum operational loading that is intended and/or allowable on each floor.                                          |  |
| Priority Level:           | Low                                                                                                                                                                                       |  |
| Non-Compliance Level:     | 2                                                                                                                                                                                         |  |
| Description:              | No Load Plans were evidenced. Design Live loads for the structure is not known. Verbal information of 100 psf as design live load should be validated by a qualified structural engineer. |  |
| Source of Findings:       |                                                                                                                                                                                           |  |
| 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:  | 15 Sep 2014                                                                                                                                                                               |  |
| Standard:                 | Alliance Standard Part 8 Section 8.10 Floor Loading Plans (Load Plans)                                                                                                                    |  |
| Question:                 | Are Floor Load Plans posted as required?                                                                                                                                                  |  |
| Priority Level:           | Low                                                                                                                                                                                       |  |
| Non-Compliance Level:     | 2                                                                                                                                                                                         |  |
| Description:              | Floor load plans are not available.                                                                                                                                                       |  |
| Source of Findings:       |                                                                                                                                                                                           |  |
| 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:  | 15 Sep 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:     | 2                                                                                                                                                                                         |  |
| Description:              | Floor load plans are not available.                                                                                                                                                       |  |
| Source of Findings:       |                                                                                                                                                                                           |  |
| Suggested Plan of Action: | Redistribute floor loads to comply with the Floor Loading Plans.                                                                                                                          |  |
| Suggested Deadline        | 15 Sep 2014                                                                                                                                                                               |  |



|                           |                                                                                                                                                                                                                              |  |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 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:     | 2                                                                                                                                                                                                                            |  |
| Description:              | No load plans or storage area demarcations observed.                                                                                                                                                                         |  |
| Source of Findings:       |                                                                                                                                                                                                                              |  |
| 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:  | 15 Sep 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:              | No program to ensure that live loads are not exceeded over and above the designed capacity was evidenced                                                                                                                     |  |
| Source of Findings:       |                                                                                                                                                                                                                              |  |
| 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:  | 15 Sep 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:     | 2                                                                                                                                                                                                                            |  |
| Description:              | No designated factory load manager was noted during the assessment.                                                                                                                                                          |  |
| Source of Findings:       |                                                                                                                                                                                                                              |  |

Factory Name: **Ananta Casualwear Ltd.**

Address: **Kunia, Targach, K.B Bazar, Gazipur Gazipur Dhaka Bangladesh**

Assessor: **Walter P. Moore**

Date: **01 Jun 2014**



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FOR BANGLADESH WORKER SAFETY

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| 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:  | 15 Sep 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:              | No Post-tensioned member observed in the structure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| Source of Findings:       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Suggested Plan of Action: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Suggested Deadline Date:  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Standard:                 | Alliance Standard Part 8 Section 8.26 Durability and Maintenance                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |