

## **RISK MANAGEMENT PLAN**

**for a Housing Complex named “SUNRISE ORCHARD” at L. R. Dag Nos. 27 to 31 and 37 to 42, J.L. No. 36, Mouza: Baikunthpur, P.S. Baruiপুর, Dist. South 24 Parganas.**

### **Project Risk**

<b>A</b>	<b>Introduction</b>	<p>All projects are subjected to varieties of uncertainties and possibilities of variations from the plan – those are loosely defined as risk for this report. Risks for the purpose of this project, could be technical, financial, environmental, operational and natural. Since it is a standard residential housing project the technical and financial risks are well defined and not investigated in this report. Moreover, some of the technical risks like structural system for the buildings would be under the purview of other authorities who would mandate the project proponent in employing enlisted structural engineer and similar other specialists for covering the technical risk. Other risks are analysed in the following</p>
<b>B</b>	<b>Environmental risks</b>	<p>The environmental risks would be routinely investigated in Environmental Management Plans as required by the authority and presented elsewhere in this report.</p> <p>The risk issues in construction phase like provision of potable water and management of suspended particulates, noise, waste water and solid wastes etc. for site office &amp; labour camps will be discussed in EMP.</p> <p>Similarly, the design related environmental issues like the analysis of water balance and microclimate study would be presented elsewhere in EMP.</p>
<b>C</b>	<b>Operational risks</b>	<p>Residential building operation and maintenance is relatively simple and well defined. The building is similar to hundreds of such buildings in metropolitan Kolkata. There are no reasons for additional importance in security, willful damage and arson risks. Therefore, these risks were not specially investigated.</p>
<b>D</b>	<b>Disaster Risk</b>	<p>The natural disasters have not been specially evaluated for this housing project by other authorities.</p> <p>Therefore, a risk assessment and disaster management evaluation following the guidelines of the Disaster Management Manual of the Department of Disaster Management, Government of West Bengal have been conducted.</p>
<b>E</b>	<b>Scope</b>	<p>The Disaster Management Manual has identified several risks out of which earthquake and fire would be mainly applicable for this housing project. The earthquake risks are to be encountered by appropriate structural design. The building would be designed based on various provisions of the National Building Codes of India. In particular, the provisions of IS 456, IS 875 and IS 1893 and other codes shall be followed. Services from competent i.e enlisted structural engineers shall be obtained.</p> <p>The fire risks shall be encountered by appropriate fire resistance planning in line with the provisions of the Part IV of the National Building Code of India. In addition, the provisions that would be mandated in the fire clearance certificate to be obtained from the West Bengal Fire Service in due course.</p> <p>Additionally, the indicative guidelines for environmental clearance of high rise issued by the State Environment Impact Assessment Authority, West Bengal (SEIAA) shall be followed including submission of the necessary reports in due course. A brief summary of the emergency preparedness as outlined in the SEIAA guideline is presented in the following</p>

### Emergency Preparedness and Response

<b>A</b>	<b>Emergency Equipment</b>	<p>Fire protection equipment as prescribed in Art 5 and its sub sections of Part IV of National Building Codes shall be installed in the building.</p> <p>The building has already received a clearance from the West Bengal Fire service for construction of the building, vide Memo no: WBFES/4711/14 dated 14.10.2014 a copy of which is attached herewith. The provisions prescribed in the said clearance shall be complied during construction of the building.</p>
<b>B</b>	<b>Emergency Personnel</b>	<p>The safety equipment are of no use in emergency unless the users are not made conversant to the correct use of the gear. The West Bengal Fire Service therefore, insists on employment of properly trained personnel during maintenance.</p> <p>The employees and security staff shall be made conversant with the installed Fire Fighting equipments of the building and to operate these in the event of Fire and Testing as usually prescribed by the West Bengal Fire Service.</p>
<b>C</b>	<b>Responsiveness Design</b>	<p>The building shall be fire resistant and fire fighter friendly. The design should be responsive to the counter measures that are taken at the time of an incident.</p> <p>The building design should be compliant to the Article 3 and its all sub sections of Part IV of the National Building Code for fire prevention measures. The design should also conform to the Article 5 and all sub sections for proper fire protection equipment</p> <p>In addition, the measures that would be outlined by the West Bengal Fire Service while providing permission shall be also be complied.</p>
<b>D</b>	<b>Evacuation Plan</b>	<p>Life safety is the most important aspect during a fire. The design must not contain any lacuna in escape planning and should evaluate all the possibilities.</p> <p>A three prong strategy would be followed for evaluating escape planning design. Firstly, the life safety provisions as prescribed in Section 4 with all sub sections shall be complied. Secondly, the requirements that would be prescribed by the West Bengal Fire Service shall be complied. Thirdly, numerical simulations for fire dynamics, CFD analysis of smoke travel and escape scenarios based on crowd dynamics principles shall be conducted in due course for evaluating the efficiencies of escape paths.</p>
<b>E</b>	<b>Emergency Training</b>	<p>A fire fighting system can effectively work only if the mock drills are regularly performed. The guidelines for evacuation procedures as prescribed in Art C:8 and expanded in Annexure E of the part IV of the national Building Code shall be complied.</p>