Table 17.1: Guidelines for Risk Assessment	
OCCUPANCY	**REQUIRMENTS**
5. FIRE MODELS	**4.b. CFAST** i CFAST (Consolidated Model of Fire Growth and Smoke Transport) is a multiroom fire model that predicts the conditions resulting from a user-specified fire within a structure. ii The required program inputs are the geometrical data describing the rooms and connections, the thermophysical properties of the ceiling, walls, and floors, the fire as a rate of mass loss and the generation rates of the products of combustion. iii The program outputs are the temperature, species concentrations, and thickness of the hot upper layer and the cooler lower layer in each compartment. Also given are surface temperatures, heat transfer, and mass flow rates. iv CFAST has very limited mechanical ventilation capabilities and can accommodate multiple fires, sprinklers, and detectors. FAST provides the data-editing and reporting tools for the CFAST model. **4.c. LAVENT** i LAVENT (Link-Actuated VENT) is a two-zone model developed to simulate the environment and the response of sprinkler links in compartment fires with draft curtains and fusible-link-actuated ceiling vents. ii The model used to calculate the heating of the fusible links includes the effects of the ceiling jet and the upper layer of hot gases beneath the ceiling. iii The required program inputs are the geometrical data describing the compartment, the thermophysical properties of the ceiling, the fire elevation, the time-dependent energy release rate of the fire, the fire diameter or energy release rate per area of the fire, the ceiling vent area, the fusible-link response time index (RTI) and fuse temperature, the fusible-link positions along the ceiling, the link assignment to each ceiling vent, and the ambient temperature. A maximum of five ceiling vents and ten fusible links are permitted in the compartment. iv The program outputs are the temperature, mass and height of the hot upper layer, the temperature of each link, the ceiling jet temperature and velocity at each link, the radial temperature distribution along the interior surface of the ceiling, the radial distribution of the heat flux to the interior and exterior surfaces of the ceiling, the fuse time of each link, and the vent area that has been opened.

Did You Know?

A fire occurred in September 1, 2010 and spread to a neighbouring building in Mount Vernon, New York. The fire investigator presented Computer Models to justify that fire started from an electric fan.

The New York court judge rejected the computer modeling, stating that defendant had not presented sufficient evidence that computer fire modeling was generally accepted as reliable in the fire investigation community.