Building parameters

- Building occupancy:

- Description: Specifies the primary use or purpose of the building.
- Sample values: Residential, Commercial, Industrial, Educational, etc.

- Height of the building:

- The distance from ground to the tallest point of a building
- Measured in either feet or metres.

- Average height of the building:

- Measure the distance from ground to different points at the top of the building and take an average.

- Number of stories

- Dimensions (length breadth height):

- For regular shaped polygons, the dimentsions as is shall be extracted. For irregular shaped elements (such as furnitures), a cubical border shall be assumed and dimensions be taken based on that.

- Position:

- The X-Y-Z coordinates of the element in the geometric plane.

- Neighbouring elements:

- A list of elements that are immediately next to said element, (along with their respective distance).
- Can be measured with a threshold area in place, and any element within the area's bounds can be assumed to be a neighbouring element.

- Material used

- Weight

- Number of said element present:

- A value count of the element in a floor or an entire building, along with the details of how many of those are in the same room. (i.e if a floor contains 5 doors, then the value of this parameter for door should be 5)

- The closest interior line:

- Identification of the closest *interior* wall or partition.
- Values must contain what boundary is closest (whether a wall, or a glass door partition or anything else) and the distance.
- Ex. Interior wall, 2 meters away

- Fire seperation distance:

- Distance between the building and other structures to minimize fire spread risk.
- Should measured from the building face to the closest interior lot line, to the centerline of a street, alley or public way, or to an assumed imaginary line between two buildings on the same lot.

- Fire resistance rating:

- Duration for which the component can withstand fire exposure.
- Varies based on the material and the component build.
- Measured in hours.

- Flame spread index:

- Measurement of the flammability of materials when exposed to fire.
- Refer to material safety data sheets or fire test reports.
- The value will be in classes such as class A,B etc…

- Ventilation airspace:

- Area allocated for natural airflow within the building.
- Calculated in sq.ft.

- Dead load:

- Permanent static load exerted by the weight of the building itself and its fixed components.

- Load due to fluids:

- Additional load imposed by fluid-containing elements like pools or tanks.

- Flood load:

- Pressure exerted by floodwaters against the building.
- Determine from flood hazard maps or hydraulic analysis.

- Live load:

- Variable load resulting from the occupancy, furniture, and movable equipment within the building.
- Calculated based on the occupancy, number of elements and other previous mentioned parameters.

- Roof live load:

- Specific live load criteria for the building's roof.

- Snow load:

- Weight of snow accumulation on the building's roof.

- Rain load:

- Pressure exerted by rainfall on the building's surfaces.

- Load due to wind pressure:

- Force exerted by wind against the building's exterior surfaces

- Risk category:

- Classification based on the level of risk associated with the building's location and use.
- Buildings are classified into different classes such as low and high based on the location and building codes.

- Wall finish thickness:

- Thickness of the finishing layer applied to the walls.

- Finish material

- Soil classification:

- Categorization of soil based on its engineering properties.
- Some classes involve Sandy, Clayey, Slit etc…
- Could be identified based on location and details.

- Soil expansivity:

- Measure of soil volume change in response to changes in moisture content.
- Calculated in percentages, i.e. 0.2% indicates a change of 0.2% in soil volume.

- Groundwater level

- Foundation types:

- Classification of the type of foundation supporting the building.
- Calculated based on soil type, ground water level, and foundation dimensions.
- Classes involve shallow foundation and deep foundation.

- Foundation elements