

# ICC Code Technology Committee

## Area of Study – Balanced Fire Protection

### Scope & Objectives

Draft 1

#### **Scope:**

To investigate what constitutes an acceptable balance between active fire protection and passive fire protection measures with respect to meeting the fire and life safety objectives of the IBC.

#### **Objectives:**

The objectives of this investigation include:

1. A determination of the level(s) of fire and life safety inherent in the IBC for different use and occupancy classifications, stated in a manner that can serve as the basis for comparing the fire and life safety benefits provided by dissimilar fire protection systems and their contribution to the overall level(s) of fire and life safety by use and occupancy.
  - A determination of those building, fire and life safety system attributes that contribute to the level(s) of fire and life safety inherent in the IBC for different use and occupancy classifications, stated in a manner that can serve as the basis for comparing the fire and life safety benefits provided by dissimilar fire protection features and systems and their contribution to the overall level(s) of fire and life safety by use and occupancy.
  - A determination on the relative level(s) of reliability and robustness associated with active fire protection (e.g., fire sprinklers) and passive fire protection (e.g., fire rated assemblies) measures, and the contribution of system reliability and robustness on the overall level(s) of fire and life safety provided.
2. To develop a decision-support mechanism to assist in resolving questions involving the trade-offs between dissimilar fire protection measures in providing a balanced level of fire protection in the code.
  - Parameters to be considered in the decision support mechanism include, but are not limited to:
    1. The ability to prevent established burning (self-propagating fire)
    2. The ability to control or contain the spread of fire and fire effluents
    3. The ability to suppress or extinguish a fire
    4. The ability to detect a fire and to notify occupants and emergency responders in a timely manner
    5. The characteristics of the occupants typically expected to occupy the building
    6. The ability of the egress system to provide an environment reasonably free from untenable conditions during the time anticipated for occupants to reach a place of safety

7. The ability for the structure to withstand the effects of fire for a sufficient time to facilitate building occupants reaching a place of safety and for fire fighters to undertake search and rescue operations
8. The relative reliability and robustness of the fire and life safety measures being compared

**Work Products:**

A report produced in accordance with Section 5.1 of CP #5 shall be submitted to the ICC CEO. The CTC Secretariat shall process the report according to the codes/standards development process of the ICC.

Items to consider in the report:

- Develop a set of definitions to describe the terms such as “balance fire protection,” “fire and life safety objectives,” “bottom-up analysis,” and “acceptable level of risk” (Objective 1).
- A “bottom-up” analysis of the provisions of the IBC to determine the level(s) of fire and life safety inherent in the IBC for different use and occupancy classifications, stated in a manner that can serve as the basis for comparing the fire and life safety benefits provided by dissimilar fire protection features and systems and their contribution to the overall level(s) of fire and life safety by use and occupancy, produced in the form of a report, in accordance with Section 5.1, and submitted to the ICC CEO (Objective 1).
- Research into, and a determination of, those building, fire and life safety system attributes that contribute to the level(s) of fire and life safety inherent in the IBC for different use and occupancy classifications, stated in a manner that can serve as the basis for comparing the fire and life safety benefits provided by dissimilar fire protection features and systems and their contribution to the overall level(s) of fire and life safety by use and occupancy, produced in the form of a report, in accordance with Section 5.1, and submitted to the ICC CEO (Objectives 1 & 2).
- Research into, and a determination of, the relative level(s) of reliability and robustness associated with active fire protection (e.g., fire sprinklers) and passive fire protection (e.g., fire rated assemblies) measures, and the contribution of system reliability and robustness on the overall level(s) of fire and life safety provided, produced in the form of a report, in accordance with Section 5.1, and submitted to the ICC CEO (Objectives 1 & 2).
- Research into, and development of, a decision-support mechanism to assist in adjudicating questions involving the trade-offs between dissimilar fire protection measures in providing a reasonable level of fire protection in the code, consistent with an acceptable level of risk, produced in the form of a report, in accordance with Section 5.1, and submitted to the ICC CEO (Objective 2).