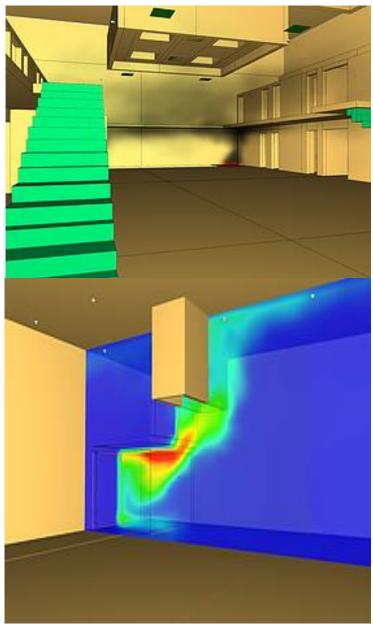# RAN
## FIRE PROTECTION ENGINEERING

# Fire Modeling

## Why Fire Modeling?

The use of fire modeling has greatly evolved since its first use in the 1940's. Today, fire modeling can help provide economic, safe, and performance-based designs for buildings. RAN Fire Protection Engineering uses fire models to determine the impact that specific design fires and associated smoke spread would have on structures. RAN's employees have over 25 years of experience in developing fire models and evaluating structures to address specific code or performance needs of a client.

RAN has experience with various types of fire models, including zone modeling, field modeling, and probabilistic modeling. Our main fire models we utilize are PyroSim, Fire Dynamics Simulator (FDS) and Consolidated Model of Fire Growth and Smoke Transport (CFAST).

Fire modeling has become an essential tool in the design of smoke control systems. It is important to use the services of knowledgeable fire protection engineers that can work hand in hand with the other trades when designing smoke control systems. Fire modeling also has an important role in litigation support.

Fire protection engineers can design small changes to the building, which can result in massive savings in system costs while still maintaining the aesthetic.

## The RAN Difference

The RAN difference in fire modeling begins with our understanding of the theory and limitations behind the model. RAN is able to do this because we are licensed fire protection engineers with the education and experience to properly use fire modeling effectively. And most of all - design an economical fire protection system with a predictable level of safety. Fire models can help:

- Predict fire growth
- Anticipate smoke spread
- Estimate detector and sprinkler activation times
- Analyze occupant tenable conditions and ability to egress the building safely