

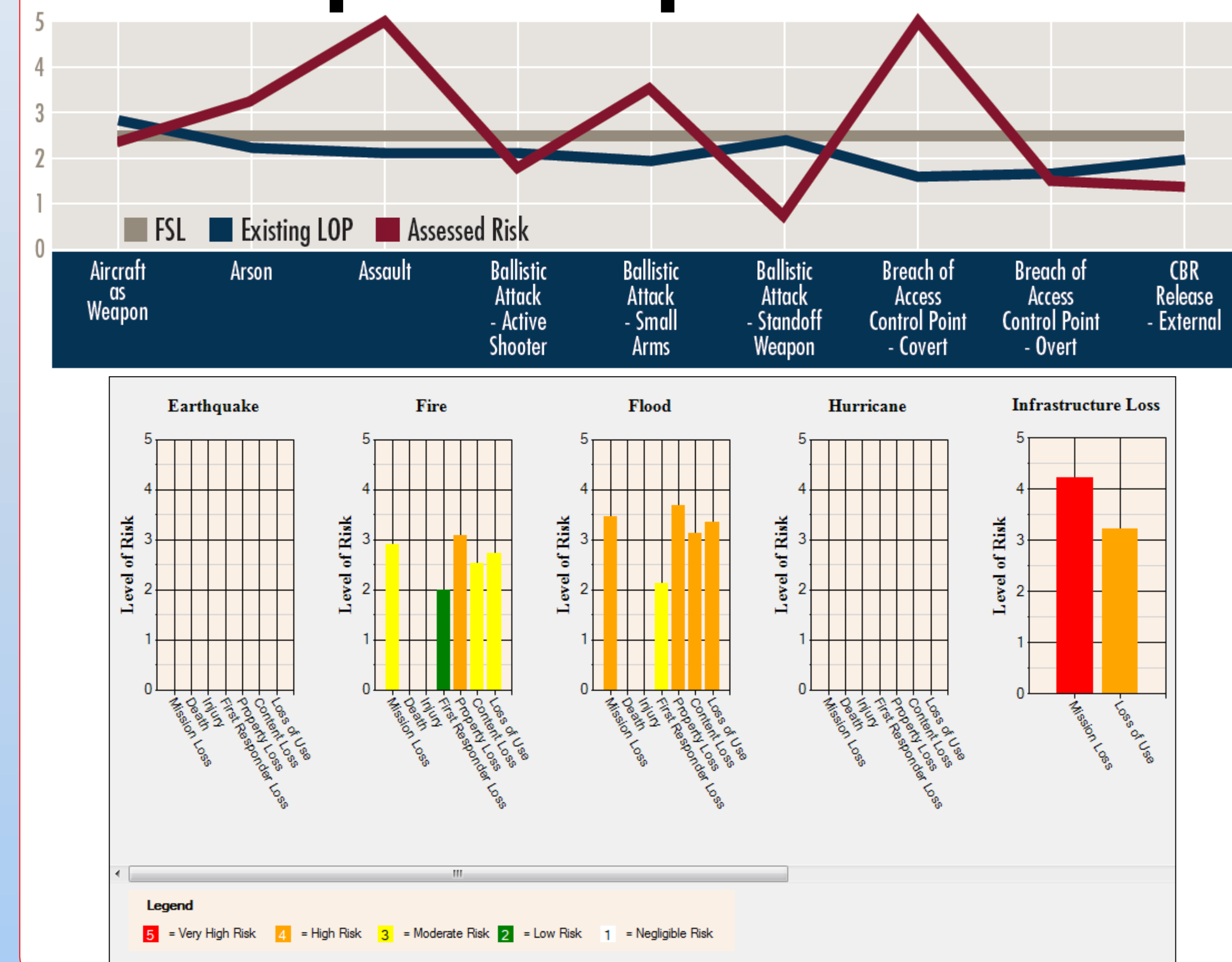
Risk Assessment Methodology Property Analysis Ranking Tool

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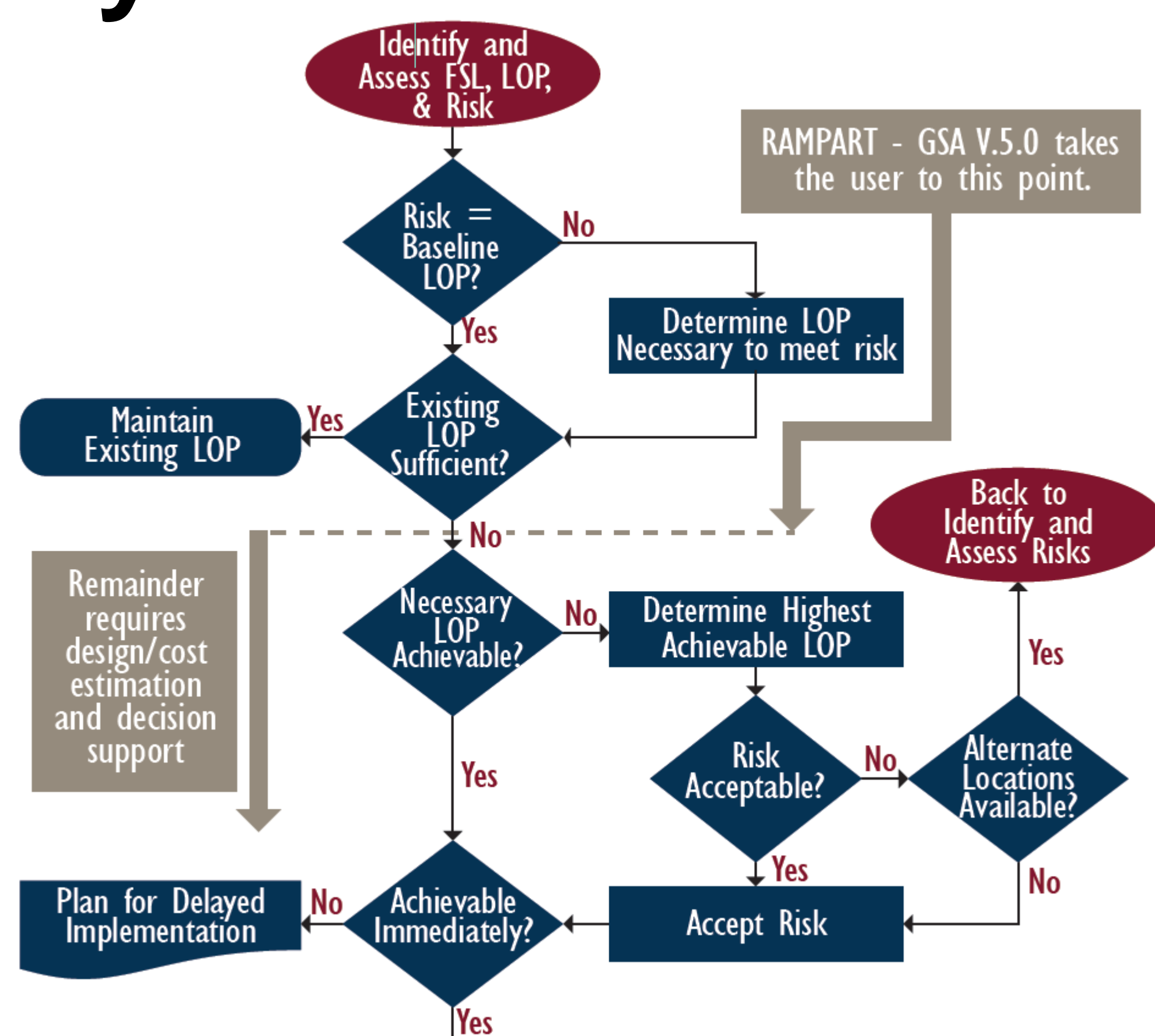
Abstract: The Risk Assessment Methodology – Property Analysis and Ranking Tool or RAMPART is a software tool for performing building screening-level risk assessments. RAMPART uses the Interagency Security Committee’s (ISC) standards for federal building security and includes national databases on crime and natural hazards. The software asks questions most building managers know the answers to. After the interview, the software uses the databases and user responses to determine the building’s security level, existing protection level, and the assessed risk against the 29 specific hazards. In addition, RAMPART determines the relative level of risk of death, injury, mission loss, property loss, contents loss, use loss, and first responder loss for each of crime, terrorism, earthquake, flood, fire, hurricanes, infrastructure loss, tornados, and winter storms. The software is publically available and was developed by Sandia for the U.S. General Services Administration.



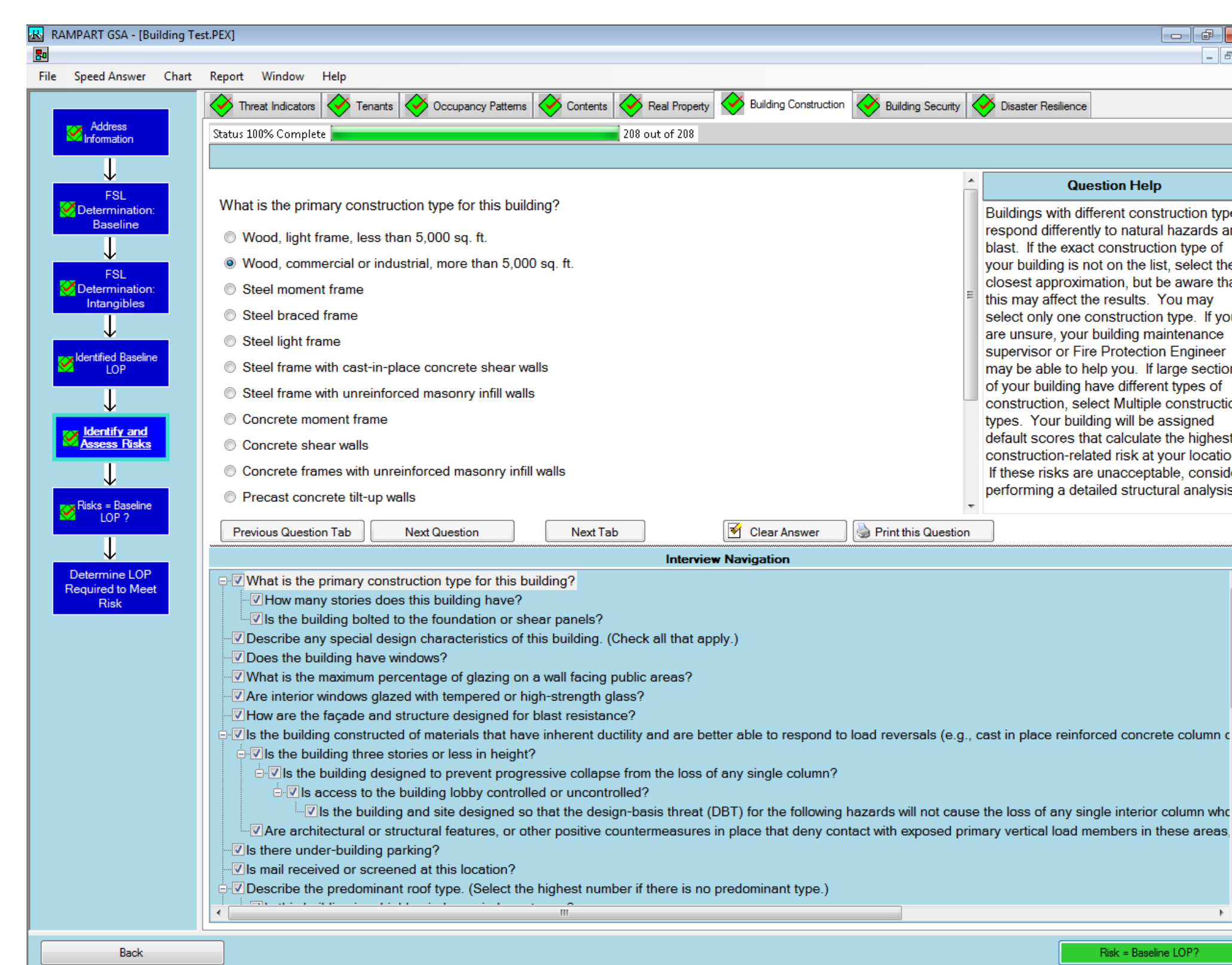
Example Output



Why? Interagency Security Committee’s Method¹⁻³:



Interface



Status

- Interface is 508 compliant.
- New questions and scoring reflect ISC’s FSL/LOP process.
- Crime algorithms reflect county populations.
- Final calibration and validation are complete.
- Version 5.0 is complete and released to GSA.
- Presently adding averaging ability, GIS links and improved natural disaster accuracy. (Version 6.0).

How? Risk = [Threat] * [Consequence] * [Vulnerability]

Earthquake Mission Risk =

$f(\text{Horizontal Acceleration})$

$f(\text{Mission Class} + \text{Number of People} + \text{Person Hours} + \text{Property Class} + \text{Content Class} + \text{Use Class})$

$1 / (1 + f(\text{Earthquake Resistance}))$

Risk =

Threat (Earthquake)

Consequence (Potential Losses that affect Mission)

Vulnerability

f indicates function of factors affecting Threat, Consequence, or Vulnerability.

- Horizontal Acceleration and Earthquake Resistance are from built-in data tables.
- Mission Class, Number of People, Person Hours, Property Class, Content Class, and Use Class are determined on the basis of user answers and expert scoring.
- Vulnerability = 1/Current Protective Measures, i.e. building earthquake resistance

Next Steps

- Optimization capability
- Add Fire, Environmental Compliance and Safety components
- Increase options for output format

Modeling Advances

Multihazard; Comprehensive building design and use; Decision support; User friendly and complete output

References

1. Interagency Security Committee. (February 21, 2008). Facility Security Level Determinations for Federal Facilities: An Interagency Security Committee Standard.
2. (October 19, 1995). Interagency Security Committee, Executive Order 12977.
3. Interagency Security Committee. (April 12, 2010). Physical Security Criteria for Federal Facilities: An Interagency Security Committee Standard.