# What Are Resilient Design Strategies?

Worksheet

Resilient design strategies are planning and construction methods - such as elevated foundations, redundant systems, and flexible materials - that let buildings and infrastructure absorb shocks and recover quickly from natural or man-made disruptions.

## Questions

1. What is the main goal of resilient design?

A) Make buildings indestructible
B) Help buildings withstand and recover quickly from disruptions
C) Reduce construction cost only
D) Eliminate the need for maintenance

2. Which is an example of redundancy?

A) A single power source
B) Backup generator plus grid power
C) One water pipe
D) A single structural support

3. Why do coastal buildings use elevated foundations?

A) To improve views only
B) To keep living space above flood levels
C) To reduce cost
D) To increase weight

4. What does defensible space protect against?

A) Earthquakes
B) Wildfire spread
C) Flooding
D) Power outages

5. A coastal home is built on elevated pilings 3 meters above ground, with utilities on the upper floor. How does this apply resilient design?

6. A hospital installs both grid power and an on-site solar-plus-battery microgrid. What resilience strategy is this?

7. A school in a wildfire zone uses fire-resistant siding, a 10-meter defensible space, and an ember-resistant vent system. How does this reduce risk?

8. Define: What is resilient design?

9. Define: What is redundancy in resilient design?

10. Define: Why elevate buildings in flood zones?

# Answer Key

1. B) Help buildings withstand and recover quickly from disruptions - Resilience is about absorbing shocks and recovering fast, not being indestructible.

2. B) Backup generator plus grid power - Redundancy means having backup systems so one failure doesn't disable the building.

3. B) To keep living space above flood levels - Elevation protects the structure and systems from floodwater damage.

4. B) Wildfire spread - Cleared vegetation buffers slow a wildfire's approach to a structure.

5. Risk identified: storm surge and flooding Elevating the structure keeps living space above the flood line Placing electrical and mechanical systems upstairs prevents water damage Result: after a flood, the home can be reoccupied in days instead of months

6. Risk identified: grid outages during storms Redundant power systems mean if the grid fails, the microgrid takes over Critical care equipment stays powered without interruption This is redundancy - a core resilient design principle

7. Risk identified: wildfire embers igniting the building Fire-resistant siding prevents direct flame spread Defensible space (cleared vegetation) slows fire approach Ember-resistant vents stop sparks from entering and igniting the interior

8. Design that helps buildings and communities withstand, adapt to, and quickly recover from disruptive events.

9. Having backup systems (power, water, structure) so a single failure doesn't disable the whole building.

10. To keep living and mechanical spaces above expected flood levels, reducing water damage.