What is Adaptive Reuse Design?

Worksheet

Adaptive reuse design converts an existing building to a new use - such as a factory into apartments - while preserving its structural frame and character-defining features instead of demolishing and rebuilding.

Questions

1. What best defines adaptive reuse in architecture?

A) Demolishing a building to build new
B) Giving an existing building a new function while retaining its structure
C) Restoring a building to its exact original condition
D) Building an identical replica elsewhere

2. Why is adaptive reuse often more sustainable than new construction?

A) It always costs less
B) It retains embodied carbon and reduces demolition waste
C) It requires no design work
D) It uses only new materials

3. What is a key design challenge in adaptive reuse projects?

A) Choosing paint colors
B) Fitting new program into the existing structural grid and floor heights
C) Selecting furniture
D) Marketing the building

4. Which is an example of adaptive reuse?

A) Tearing down a warehouse for a parking lot
B) Converting a historic power station into a gallery
C) Building a new office tower on an empty lot
D) Repainting a building's exterior

5. A disused power station has massive turbine halls and thick concrete walls. What adaptive reuse strategy fits?

6. A 1920s department store in a city center is vacant. How can it be adaptively reused for housing?

7. A small rural chapel is no longer used for worship. What adaptive reuse options respect its character?

8. Define: What is adaptive reuse?

9. Define: Why is adaptive reuse considered sustainable?

10. Define: What is a common challenge in adaptive reuse?

Answer Key

1. B) Giving an existing building a new function while retaining its structure - Adaptive reuse assigns a new function to an existing building while keeping its structure and character.

2. B) It retains embodied carbon and reduces demolition waste - Reusing existing structure and materials avoids the carbon cost of demolition and new production.

3. B) Fitting new program into the existing structural grid and floor heights - Existing structural constraints often shape how new functions can be fitted in.

4. B) Converting a historic power station into a gallery - Converting a power station into a gallery reuses the existing structure for a new function.

5. Assess the structure: the tall turbine halls suit large public or gallery spaces. Insert new independent structures (mezzanines, galleries) inside the existing shell without overloading old walls. Expose original machinery or structural elements as design features telling the building's story. Upgrade insulation and services while keeping the industrial character visible.

6. Study the existing structural grid and floor-to-floor heights to see if they suit residential units. Insert new partition walls and plumbing risers within the existing frame rather than reconfiguring structure. Add light wells or reopen original skylights to bring daylight into deep floor plates. Retain the historic street-level facade and storefront rhythm to preserve urban character.

7. Identify the chapel's defining features: nave proportions, stained glass, timber roof structure. Choose a compatible new use - such as a community hall, library or small event space - that doesn't require major structural change. Keep significant liturgical or architectural elements (altar niche, windows) as visible heritage features. Add reversible modern insertions (seating, lighting, kitchenette) that don't damage historic fabric.

8. Converting an existing building to a new function while retaining its structure and character.

9. It reuses embodied carbon and materials already in the building, avoiding demolition waste and new material production.

10. Fitting new uses (like housing or offices) into an existing structural grid and floor-to-floor height.