

Exam S2, 2026

Corrigé type avec barème

3D Modeling and Digital Design

3D modeling is a digital technique that allows architects and designers to visualize projects in three dimensions. Unlike 2D drawings, 3D models help understand volume, depth, and spatial relationships. Software such as SketchUp, Rhino, Revit, and Blender is commonly used in architectural practice. Infographics often integrate 3D elements such as axonometric views and exploded diagrams. These representations help explain construction systems, spatial organization, and component relationships.

Rendering and Visual Realism

Rendering is the process of generating final images from a 3D model. It allows designers to simulate light, materials, textures, and shadows realistically. Photorealistic renderings help clients visualize how a space will look before it is built. In architectural infographics, renderings are often combined with diagrams and annotations to explain design decisions. This combination improves both aesthetic impact and technical understanding.

Diagrams and Data Visualization

Diagrams are simplified visual representations used to explain complex architectural information. They focus on relationships, processes, and systems rather than details. Data visualization uses graphics to represent numerical or analytical data such as flows, densities, or environmental performance.

These tools are particularly important in urban design, sustainability studies, and spatial analysis. They allow architects to communicate research findings clearly and effectively.

I. Multiple Choice Question (MCQ) 13p

1. ***What is the main advantage of 3D modeling compared to 2D drawings? 1P***
 - A. It reduces construction costs
 - B. It helps understand volume and spatial relationships
 - C. It replaces architectural plans completely
 - D. It only focuses on decoration

Answer: B

2. *Which of the following software is commonly used for 3D architectural modeling? 1p*
- A. Photoshop
 - B. AutoCAD LT only
 - C. SketchUp
 - D. Microsoft Word

Answer: C

3. *What do axonometric views and exploded diagrams help explain? 1p*
- A. Historical events
 - B. Construction systems and spatial organization
 - C. Only furniture placement
 - D. Building regulations only

Answer: B

4. *What is rendering in digital design? 1p*
- A. Drawing by hand
 - B. Creating technical calculations
 - C. Generating final images from a 3D model
 - D. Printing construction documents

Answer: C

5. *Which elements can rendering simulate realistically? 1p*
- A. Light, materials, textures, and shadows
 - B. Only building dimensions
 - C. Sound and smell
 - D. Structural calculations only

Answer: A

6. *Why are photorealistic renderings important in architecture? 1p*
- A. They replace engineers
 - B. They help clients visualize spaces before construction
 - C. They eliminate the need for models
 - D. They reduce project size

Answer: B

7. *In architectural infographics, renderings are often combined with: 1p*
- A. Poetry and literature
 - B. Maps only
 - C. Diagrams and annotations
 - D. Construction machines

Answer: C

8. *What is the primary purpose of diagrams in architecture? 1p*
- A. To decorate presentations
 - B. To explain complex information simply
 - C. To replace renderings
 - D. To calculate costs

Answer: B

9. **Diagrams mainly focus on: 1p**
A. Fine artistic details
B. Relationships, processes, and systems
C. Furniture brands
D. Structural failures only

Answer: B

10. **What does data visualization represent? 1p**
A. Only textual information
B. Numerical or analytical data using graphics
C. Building materials physically
D. Construction contracts

Answer: B

11. **Which field particularly benefits from data visualization? 1p**
A. Cooking design
B. Fashion design
C. Urban design and sustainability studies
D. Music production

Answer: C

12. **Which of the following is NOT mentioned as a 3D modeling software in the text? 1p**
A. Rhino
B. Blender
C. Revit
D. Illustrator

Answer: D

13. **Why are infographics useful in architecture? 1p**
A. They simplify and communicate technical information effectively
B. They replace construction workers
C. They reduce the need for planning
D. They only improve decoration

Answer: A

II. True or False 3p

1. Rendering is the process of generating final images that simulate light and textures realistically. Answer: **True 1p**
2. Diagrams focus primarily on relationships and systems rather than intricate technical details. Answer : **False 1p**
3. Photorealistic renderings are often used to help clients visualize a space before construction begins. Answer: **True 1p**

II. Matching Exercise: Match the term with its definition .6p

Term	Definition
1. Axonometric view	B. A 3D element often integrated into architectural infographics.
2. Diagrams	A. Simplified visuals explaining complex systems and processes.
3. Data Visualization	C. Graphics representing numerical data like flows or densities.
4. SketchUp	D. Easy 3D conceptual modeling
5. Blender	E. Photorealistic visualization
6. Revit	F. Architectural BIM modeling

Answers

- 1- → B *1p*
- 2- → A *1p*
- 3- → C *1p*
- 4- → D *1p*
- 5 - → E *1p*
- 6- → F *1p*

IV. Fill in the gaps 12p

1. Software such as SketchUp, Rhino, Revit, and is commonly used in architectural practice. Answer: **Blender 1p**
2. diagrams help explain construction systems and component relationships.
Answer: **Exploded 1p**
3. In architectural infographics, are often combined with diagrams to explain design decisions. Answer: **renderings 1p**
4. Data visualization is particularly important in design and spatial analysis.
Answer: **urban**
5. Rendering allows designers to simulate, materials, and shadows. Answer: **light, 1p**
6. 3D modeling allows architects to projects in three dimensions. Answer: **visualize 1p**
7. Diagrams focus on, processes, and systems. Answer: **relationships 1p**
8. Digital design tools allow architects to communicate findings clearly
Answer : **research 1p**
9. Unlike, 3D models help understand spatial relationships. Answer: **2D drawings 1p**
10. The combination of renderings and annotations improves both impact and technical understanding. Answer: **aesthetic 1p**
11. Environmental, can be represented through data visualization.
Answer: **performance 1p**
12. Exploded diagrams help explain organization. Answer: **spatial 1p**

V. Contextual word choice 6p

1. Rendering generates images from a 3D model. Answer: **final 1p**
2. Diagrams are..... visual representations. Answer: **simplified 1p**
3. 3D models help understand and depth. Answer: **volume 1p**
4. Data visualization is vital for studies. Answer: **sustainability 1p**
5. Infographics 3D elements like exploded diagrams. Answer:
integrate 1p
6. Photorealistic renderings simulate textures. Answer: **realistic 1p**