

5 words to remember

- computer-aided design (CAD):** using computer software to help design real-world artefacts, including objects, sculptures or buildings
- photorealistic:** an image that is indistinguishable (or nearly indistinguishable) from a digital photograph
- render:** to create a 2-D image from a 3-D virtual scene
- screencast:** a recording or capture of computer-screen output, often including audio narration, which can be used to provide a virtual tour of a design project
- virtual:** does not exist in physical form, but made by software to appear to do so

People: Zaha Hadid

Zaha Hadid (1950–2016) was an Iraqi–British architect who is known for designing ambitious structures such as the London Aquatics Centre for the 2012 Olympics. She won many prestigious prizes for her work, which is most appreciated for its creativity, drama and curves. Zaha integrated the use of technology into her design work, but continued to prefer to draw her buildings by hand.



Key takeaways

- Artists, designers and architects are skilled at realistically representing 3-D scenes on a 2-D canvas or screen.
- The process of visualising 3-D models using **computer-aided design (CAD)** is known as **rendering**, and can provide **photorealistic** images.
- Architects use CAD software to support their design process, as well as model-making and perhaps even 3-D printing.
- The advantages of CAD software for architects include speed, quality and accuracy. CAD software, such as Trimble SketchUp, allows users to turn 2-D shapes quickly in 3-D scenes.
- CAD software allows users to move around their designs to allow viewing from different perspectives, for example in the following ways:

	Orbit – allows movement around, above and below the model
	Pan – allows movement left, right, up and down
	Zoom – zooms in or out to focus on a specific area or to see the entire space
	Look around – provides a camera perspective allowing viewing from side to side
	Walk around – another eye-height camera perspective allowing viewing by moving forward or turning

- Trimble SketchUp allows users to add colours, materials and textures to designs, as well as inserting additional pre-designed objects from the 3-D warehouse.

Knowledge check

Once a design is complete in SketchUp, users can create a **virtual** tour by capturing the model from different angles.



Additional software can be used to turn the tour into a **screencast**.

Test yourself: What is a 'screencast'?

- a) A video and audio recording of what happens on your screen
- b) A still image of your screen
- c) A way to share your screen in real time with others
- d) An in-person speech in front of a screen

The 'orbit' tool in Trimble SketchUp allows users to view their designs from a range of different perspectives.

Test yourself: Do all four of these images belong to the same model?

