Designing a building or an urban space is collaborative work that involves participants with different backgrounds. To achieve consensus all participants must discuss the evolving design. Space Pen is a new system that allows collaborators to mark up a three-dimensional model of a building remotely over the Internet.

Space Pen enables a visitor to draw on model surfaces or click to leave more elaborate text comments. It recognizes simple shapes—circles, rectangles, triangles or arrows—drawn in space and can "clean up" the hand-drawn figures. As a visitor browses the model, the Space Pen engine generates and displays a floor plan showing the visitor's changing viewpoint.

Any model in VRML format can be placed on the Space Pen server for mark-up.

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**Space Pen**

sketching on 3D models on the web

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*top left to bottom right: 1 and 2: The designer indicates where to create a door. 3: A transparent plane appears in front of the designer to comment on the position of the house (4). 5: The designer, who wants to move a window to the right, just draws the revision on the wall.*