

Cave mapping

WIND CAVE NATIONAL PARK . . . IS an intricate, multilevel maze of underground passages of incredible dimension. . . . Making proper management decisions invariably comes down to knowing precisely what resources are located in each area of the cave. For this reason, cave maps have always been invaluable tools for the cave manager. [However], it is difficult to portray three-dimensional relationships of these passages on a two-dimensional piece of paper. . . . Concerned that the map should more accurately portray the relationship between the cave and the overlying surface features and developments, the management at Wind Cave decided that a redrafting of the map was necessary. . . . It was immediately apparent that a computer would be necessary. . . .

Just as a word processor is used to manipulate words, sentences, and paragraphs CAD [computer aided design] software is designed to manipulate lines, arcs, circles, and the drawings which contain them. . . . No longer did we have to worry about the map being unreadable in vertically complex sections of the cave. By placing each survey station on a layer based on its elevation, we could “turn off” layers in complex areas of the cave to zoom in on the area we were interested in. Layers could be created to portray surface topography, surface developments, and vegetation types overlying the cave, providing visual clues to the links between surface and subsurface worlds. . . . With a little programming, we have unleashed the real power of the digitized map. . . . The information age is just beginning at Wind Cave National Park.

Reference

Nepstad, J. 1989. CAD applications at Wind Cave NP. *Park Science* 9(4):6–7.