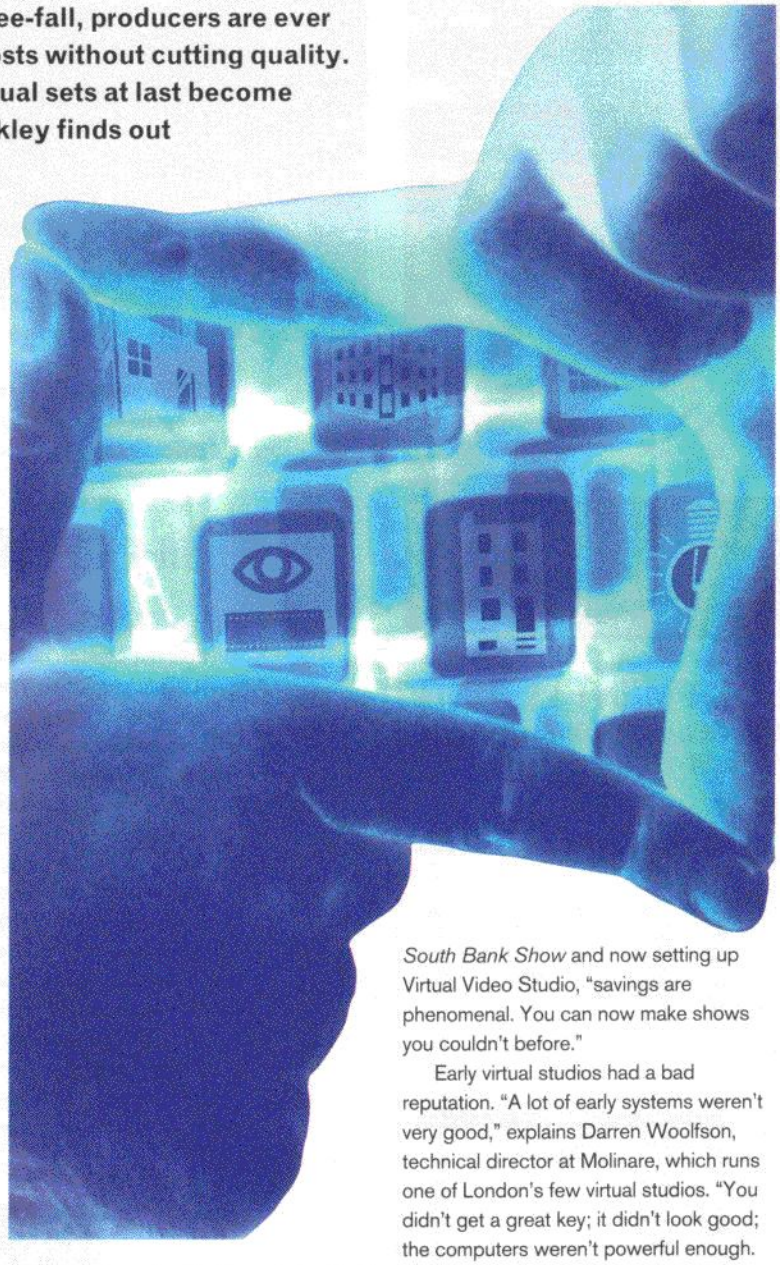
virtual studios

With programme budgets in free-fall, producers are ever looking for new ways to cut costs without cutting quality. Have computer-generated virtual sets at last become a working reality? Robert Buckley finds out



SIMON PEMBERTON

The cheapest set is the one you don't have to build. No set-builders, no time putting it up or striking it, and it won't get broken in storage. Sadly, no such set yet exists; virtual sets are the next best thing.

Like its parent, chromakey, the virtual studio replaces a shot's real background with another. This computer-generated background shifts as the camera moves: create your set in a computer, and performers and cameras move around it as though it were real. According to Les Young, 20 years a cameraman on *The South Bank Show* and now setting up Virtual Video Studio, "savings are phenomenal. You can now make shows you couldn't before."

Early virtual studios had a bad reputation. "A lot of early systems weren't very good," explains Darren Woolfson, technical director at Molinare, which runs one of London's few virtual studios. "You didn't get a great key; it didn't look good; the computers weren't powerful enough. And that mindset's still there." Young agrees: "Producers saw terrible US sets in garish colours and thought 'if it looks like that, I don't want it.' But there have been a lot of technological innovations."

Most have been in computing power, leading to more complex sets. Woolfson believes that, as long as you can render the set in real-time, you can make it look as real as you want, even using scanned-in photographs wrapped round virtual objects. "Model-building is slow, largely because you have to be so careful. It would be nice if you didn't have to worry about using too many polygons..."

The more complex, the more costly, so top-end virtual sets have more of an edge in long-running series, like news and sports shows, for which the initial outlay is a tiny part of the budget. Along with computer power, you need graphics experts to create sets. Pyramid Post, which bought a virtual studio set-up in January, already had an in-house graphics department: "without it," says md Keith Oliver, "it would have been a struggle."

Virtual studios have their own problems, depending on the studio used. Some determine the positions of actors using a backdrop of irregular lines. To stop these appearing in-shot, the matte-operator has to reduce the machine's sensitivity, and risk loss of detail.

For a good key, you need even background colour in the studio. This means strong lighting, which a director may not want. Coloured light can also spill on to foreground objects so they are keyed out. BBC Resources solves this using a cloth that reflects light from an LED ring fitted to the lens. Anything covered in the cloth becomes background; everything else stays in the foreground.

The last big problem is knowing where people are. If a presenter walks around a virtual object, it has to switch between background and foreground. Some systems do this manually, others using tracking devices performers wear.

For "two presenters in front of a pot plant," this isn't a problem. Manchester's Andrew Sumner has invested in a virtual studio that doesn't allow the camera to move. According to facility manager Brian Hardman, "research shows that 90% of shows suited to virtual studios don't have camera movement. So far, I believe it." Granada uses it for *The Haunted Fishtank*, and Manchester's bespoke digital channel Metro TV will make considerable use of it.

"Problems are minor, as long as you're experienced enough to know what's caused them," says Woolfson. Though virtual studios have had a relatively small takeup, all those offering them expect returns within two years. With digital channels requiring more programmes on small budgets, they may be right. ■