

The new PC-E Nikkor 24mm f3.5 Lens:

**DIGITAL ARCHITECTURAL PHOTOGRAPHY
GETS A BOOST FROM NIKON**

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Perspective control is an essential technique of architectural photography: ensuring that when you aim a camera up or down or to the side to take a picture of a building or interior, its lines will not appear slanted. This is achieved by moving only the lens, independent of the film or digital sensor at the back of the camera, which has to parallel the subject to avoid perspective distortion. In other situations, selective focus may be desired, which can require tilting the lens. Whatever the correction, either a traditional view camera with flexible bellows or a purpose-designed “shift” or “shift-and-tilt” lens, a.k.a. “PC” (perspective control) lens, is necessary for such effects in the photographic process.

Until recently, little practicable investment had been made in developing optics and other products for serious digital architectural photography. The main problem has been that digital sensors require wider and higher-resolving optics for architectural photography (with particular concern for the periphery of the image) than film cameras, while the market for such products was apparently considered insufficient to justify the costs of such specialized optics. A few medium- and large-format camera systems capable of independent lens movements have been adapted to digital backs of 22-39MP resolution costing \$14,000-30,000+ including newly-designed view camera optics, but even these lack the full coverage of film (which can be used in many of the same cameras at a small fraction of the cost of digital sensors) because the digital sensors are smaller than the film area.

The few existing shift lenses for regular 35mm and equivalent digital cameras had been designed for film. This is not to say that architectural photography and perspective control have not been possible with digital photography, but that capability has been limited to the extent that the majority of architectural photographers have continued to use film (which nevertheless is usually scanned for digital processing and follow-up applications). Using digital sensors with these film-based optics results in only slight-to-moderate perspective correction, with a sometime complication called fringing, a distorting effect around the periphery of the digital image.

Users of Photoshop know that the software includes a versatile perspective correction mechanism that can correct for slanting lines. This tool, however, is applicable for relatively minor adjustments (i.e., in the context of the universe of the architectural photographer). Moreover, such adjustments necessitate cropping. As such, the majority of architectural photographers consider Photoshop perspective control a fine adjustment device rather than an adequate substitute for perspective control in the photographic process.

New from Nikon:
PC-E Nikkor 24mm f3.5 Digital Lens

Finally. . .an optic expressly designed for perspective control and selective focus on a regular SLR digital camera. The lens is ideal with Nikon's top-of-line D3, D300 and D700 digital cameras, with which automatic aperture control is possible. (The D3 model features a full-frame CMOS sensor with coverage identical to a 35mm film camera, ideal for wide-angle and perspective control applications.) The PC-E Nikkor is not suitable for certain older Nikon SLRs, such as the F90 series; and its movements may be restricted on other Nikon cameras, so before purchasing the PC-E Nikkor, be sure that the lens will fit your Nikon camera. (As of this date, Canon, Olympus and other SLR digital camera manufacturers have nothing to match this lens.)

The PC-E Nikkor 24mm lens is among the most powerful PC lenses ever produced, with up to 11.5 mm of shift (48% displacement) over a very wide angle of view—comparable in coverage to larger view camera optics. At the same time, the PC-E Nikkor 24mm is capable of 8.5° lens tilt (for example, tilting the lens downward (independent of the film or sensor) can put both background and foreground in sharp focus without having to stop the lens down to f16-f32.) Furthermore, the lens is capable of revolving 90° for maximum shift-and-tilt flexibility. With all of this versatility, the PC-E Nikkor 24mm is necessarily large and bulky, weighing about 1½ pounds. Its price is about \$2,000. Other Nikkor PC-E lenses are available in the standard and moderate telephoto focal lengths of 45mm and 85mm respectively.

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